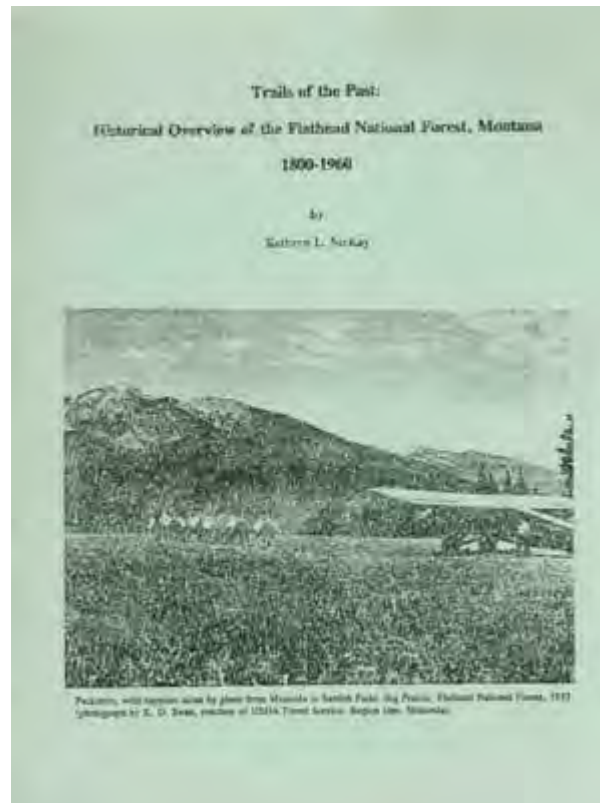




TRAILS OF THE PAST:
Historical Overview of the Flathead National Forest, Montana, 1800-1960

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1994

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Librarians and archivists provided invaluable assistance in tracking down obscure documents. At the top of the list are the librarians and staff in the reference department of the Flathead County Library, especially Rita, Barbara, Nancy, and Kim. They processed pages of Inter-Library Loan requests, allowed me easy access to the Montana files and the microfilm collection, and strove to answer my obscure questions. Their good cheer and persistence make it a pleasure to do research in the library.

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PREVIOUS WORK

Cultural resource surveys of the Flathead National Forest have been conducted since 1974. The inventory forms and site records that have been prepared over the years provide excellent material on the history of the Flathead National Forest. The surveys have been conducted by both Forest Service cultural resource specialists and by private consultants. Most of the Forest's cultural resource surveys have been project specific and performed in order to comply with federal laws. This has tended to bias the known information somewhat.

In 1991 Historical Research Associates completed a large study of Forest Service administrative sites in Region One. The document and the associated National Register nominations (Caywood et al. 1991) proved very helpful for this project. Historic overviews of other Forests also aided in developing the context for the Flathead National Forest. The recently completed history of the Northern Region of the Forest Service (Baker et al. 1993) is also helpful for providing a broader context for local developments. Particularly relevant will be the historical overview of the Kootenai National Forest (not yet completed when this overview was prepared).

Some of the local histories of the Flathead Valley contain a great deal of information not available elsewhere. These include books and articles by Henry Elwood (particularly Elwood 1976, 1980) and the articles and other material in the 10 volumes compiled by Samuel Johns (Johns 1943)

Other sources that provide invaluable information include Charlie Shaw's history of the Flathead National Forest (Shaw 1967), Flora Mae Bellefleur Isch's thesis on the upper Flathead Valley (Isch 1948), Patricia Bick's history of homesteading on the east side of the North Fork (Bick 1986), the collection of reminiscences by Region One Forest Service retirees (USDA FS 1944-76), Pat Taylor's written descriptions of work on the Flathead National Forest in the 1930s (Taylor 1986), and a number of the interviews (oral histories) conducted by the Flathead National Forest and the Montana Historical Society.

The Montana files at the Flathead County Library are arranged by subject and fill several file cabinets. These include a great variety of published and unpublished information on the area's history. The library also is the repository for many of the articles cited in the *Flathead River Basin Bibliography* that otherwise would be difficult to find.

METHODOLOGY

Kathryn L. McKay was the project historian and principal investigator for the project. She holds an M. A. from the University of Delaware in American History, specializing in the History of Technology. She has extensive prior research experience in the project area through the following projects: National Register nominations for four historic districts and 50 individually eligible properties in Kalispell, Montana; three seasons working as an archaeological technician on the Flathead National Forest; teaching classes on the history of the North Fork of the Flathead for Glacier Institute and Elderhostel; and miscellaneous smaller research projects on Flathead Valley history.

The project historian conducted research at a wide variety of repositories. Sources consulted included books, articles, government documents, unpublished manuscripts, oral history tapes and transcripts, maps, and photographs. All sources used in the overview have been compiled into an annotated bibliography included with the overview. The repositories of sources that are relatively difficult to find are noted in the bibliography.

The project historian visited the following libraries and archives:

Forest Service

Region One Archives, Missoula
Flathead National Forest Supervisor's Office, Kalispell
Bigfork Ranger Station, Bigfork
Glacier View Ranger Station, Columbia Falls
Hungry Horse Ranger Station, Hungry Horse
Spotted Bear Ranger Station, Spotted Bear
Tally Lake Ranger Station, Whitefish

Libraries

Flathead County Library, Kalispell
Glacier National Park Library and Archives, West Glacier
Mansfield Library, University of Montana, Missoula
Renne Library, Montana State University, Bozeman
Montana Historical Society Library, Helena
National Archives, Suitland, MD

Photograph Collections

Flathead National Forest, Kalispell
USDA Forest Service, Region One, Missoula
Stumptown Historical Society, Whitefish

Glacier National Park, West Glacier
University of Montana, Missoula
Montana Historical Society, Helena
Henry Elwood (private), Kalispell

Sources such as newspapers could not be researched in depth because of time constraints, although local newspapers were searched under specific dates in order to learn more about certain events. Some historic themes have not been covered much in the existing literature, so there is less material available on these subjects (for example, grazing and trapping on the Flathead National Forest, or strikes at Flathead Valley sawmills other than IWW-led strikes). This document is an overview; uneven treatment of the various subjects is likely to exist. This can be remedied by more intensive research at a later date.

No fieldwork was conducted for the overview. The author, however, is familiar with the historic sites on the Forest; this knowledge supplemented the written documentation available from reports, site files, and other research materials.

The research and writing of the overview were done by the project historian between October 1993 and June 1994. It took approximately 200 person-days to prepare the overview.

ENVIRONMENT

General Setting

The Flathead National Forest today occupies over 2.3 million acres in the northern Rocky Mountains of northwestern Montana. The Canada/United States boundary is the northern border. Approximately 130 miles of boundary are shared with Glacier National Park along the North and Middle Forks of the Flathead River. The Flathead Indian Reservation lies west of the southern end of the Forest. The Forest is also bounded by the Lewis and Clark National Forest on the east, the Lolo National Forest on the south, and the Kootenai National Forest on the west. The Stillwater, Coal Creek, and Swan River State Forests are located within the area of this study, and it also includes portions of Flathead, Lake, Lewis and Clark, Lincoln, Missoula, and Powell counties. The Flathead National Forest manages 51% of the land in Flathead County.

The natural resources of the project area have attracted people to the area and have both limited their efforts and contributed to their successes. Major communities in the area include Kalispell, Columbia Falls, and Whitefish.

Climate

The weather in the project area is cool and maritime-influenced. Annual precipitation varies from 16" in the valley bottoms to more than 100" on the mountain tops. On the valley bottoms about half of the precipitation falls as snow, whereas at the higher elevations up to 80% is snow. Air temperatures range from -40° F to over 100° F. The growing season ranges from over 90 days to less than 60 days, depending primarily on elevation and exposure.

Topography

The topography typifies that of glaciated lands, featuring high alpine basins and broad U-shaped valleys. All three types of glaciation - continental, alpine, and valley - occurred in the project area. The highest mountain peaks in the area are just over 10,000' in elevation; the elevation of the Flathead Valley is approximately 3,000'. The major mountain ranges generally run north-south.

Glaciation from the last ice age, which ended approximately 10,000 years ago, influenced the shape of the land as well as the composition of the soil. The bedrock is mostly metasedimentary argillites, quartzites, and limestones from the Precambrian era. Most of the mountain ranges have been formed by block faults. The Rocky Mountain Trench extends from British Columbia southeast through today's towns of Eureka, Kalispell, and St. Ignatius. The soils in the project area are young and silty in texture. A volcanic ash surface mantle ranges from 4" to 8" in thickness.

Flathead Lake is the largest natural freshwater lake west of the Mississippi. Five major stream systems feed the Flathead River drainage, which eventually flows into the Columbia River system. The three forks of the Flathead River (North, South, and Middle) drain a major portion

of the project area. The Stillwater River empties into the main stem of the Flathead River a short distance north of Flathead Lake. The Swan River flows north and also empties into Flathead Lake. The Hungry Horse Dam has created the Hungry Horse reservoir on the lower end of the South Fork of the Flathead River. There is also a dam on the Swan River near its mouth.

Much of the terrain in the project area has slopes greater than 60%. Generally, the lands with gentle slopes are lower in elevation and have a longer growing season. There are no known geothermal features in the project area.

Vegetation

Elevation, precipitation, topography, and temperature extremes have resulted in diverse plant communities that support a wide variety of plant and animal life. In the wooded areas, the subalpine fir series is the dominant habitat type, but the forest vegetation ranges from the warm-dry ponderosa pine/bunchgrass type to the cool-moist whitebark pine type. Most of the land below 7,000' in elevation is capable of supporting tree cover. The occasional exceptions are bogs and wet meadows, dry meadows, shrub fields, talus slopes, rock outcrops, and avalanche chutes.

The existing vegetation shows the influence of wildfire. Extensive stands of even-aged lodgepole pine are prevalent throughout the Forest. Fire's influence is also shown in vegetative mosaics, affecting species composition, age class, and life form.

Wildlife and Fish

The Flathead National Forest provides habitat for approximately 250 species of wildlife and 22 species of fish. Wildlife that inhabits the Forest includes elk, mule deer, whitetailed deer, moose, Rocky Mountain goat, grizzly bear, black bear, cougar, gray wolf, wolverine, lynx, coyote, gray squirrel, pileated woodpecker, bald eagle, peregrine falcon, and various fur-bearing mammals. Native fish species include bull trout, cutthroat trout, mountain whitefish, and several others. Introduced species include rainbow and brook trout, arctic grayling, kokanee salmon, and northern pike.

Minerals

The dominant mineral activity on the Flathead National Forest today is oil and gas leasing. Approximately 1.2 million acres are either leased or under lease application. There are no known active mining operations on the Forest.

(compiled from FNF "Forest Plan" 1985; Alt 1986)

ABBREVIATIONS USED IN TEXT

ACM	Anaconda Copper Mining Company (also known as the Amalgamated Copper Company)
BF	board feet
BM	Butte & Montana Commercial Company
CCC	Civilian Conservation Corps
GLO	General Land Office
GNRR	Great Northern Railway
HBC	Hudson's Bay Company
IWW	Industrial Workers of the World
MBF	thousand board feet
MMBF	million board feet
NMFA	Northern Montana Forestry Association
NPRR	Northern Pacific Railroad
USGS	United States Geological Survey

INTRODUCTION



(Northern Region News banner, 7 March 1938)

The history of the Flathead National Forest is closely tied to that of the Flathead Valley. This historic overview attempts to place developments on the Flathead National Forest into the broader context of developments in the Flathead Valley and beyond, both within and outside the Forest Service. The changing uses of Flathead National Forest lands reflect larger social and technological changes occurring in the United States at the same time. This overview does not address Native American use of the land in any detail because that important topic is to be the subject of a prehistoric overview of the Flathead National Forest.

In 1897 the U. S. Congress created the two forest reserves that later became known as the Flathead National Forest. Until the 1940s, the major management activities on the Forest centered on fire detection and suppression, trail building, the installation of an extensive backcountry telephone network, running big-game surveys, and the administration of forest homestead applications and a limited number of commercial timber sales. World War II marked a turning point in the management of the Flathead and other national forests. Subsequently, timber sale volumes increased dramatically, as did the public demand for recreation, and the system of fire detection changed from its previous emphasis on manned lookouts to the use of aerial patrols.

In the past several decades, competing interests in the resources of the national forests have led to conflicts over how best to manage the natural and man-made resources within the Forests. The public has become increasingly involved in the decision-making process as the various "multiple uses" of the national forests are weighed and day-to-day and long-term management decisions are made. The term "ecosystem management" has recently become popular to describe the agency's broader perspective on managing the land for which it is responsible. Change, as usual, is in the wind, due to relatively recent federal laws and to a new generation of professionals working within the Forest Service.

An understanding of human attitudes, policies, and actions on the land in the past improves decisions made *today*. This overview relies heavily on written documents to provide an understanding of the impacts of humans on the land in the Flathead Valley area from the years 1800 to 1960. Much can also be learned from the land itself, its vegetation and topography, and the physical remains of past human activity.

The physical evidence of the history of the Flathead National Forest is varied, and it is often fascinating to visit on site. Although some cultural resources have been destroyed by wildfire and many others by natural deterioration or intentional demolition, other resources remain to enlighten us today. Some of these are described briefly in the chapter introductions that follow. In addition, many names of mountains, creeks, and other natural features reflect earlier uses of the area, while others memorialize specific people.

It is difficult, in today's world of highway transportation, prepared foods, and computers, to comprehend the world of a Forest Service ranger in, say, 1915. The Flathead National Forest provides some of the best opportunities in the nation to enter this world of the past. Travel into the remote backcountry on foot or by horse, be sure to bring your imagination, and gain a sense of the challenges and privileges experienced by these early custodians of the national forests. But most important, get a sense of the land; the history of the Flathead National Forest is, after all, firmly rooted in the land itself.

The Flathead National Forest encompasses several million acres of land in northwestern Montana. The changing management of these public lands has played a significant role in the development of the Flathead Valley over the years, particularly in the fields of fire management, timber management, and recreation. Some Flathead National Forest employees spent their entire careers on the Flathead; others worked on many different national forests. The story of these workers - their evolving goals, their challenging working conditions - follows. But above all, the story of the Flathead National Forest is the story of the land. The history of the Flathead Valley has been shaped by its topography, the limitations the land imposes, and the opportunities it affords to the humans in the area.

Note on the Various Names of the Flathead National Forest

The land managed by the Forest Service in the northern Rockies just south of the international boundary has been known by several different names over the years, as follows:

The north portion (Stillwater, North Fork) has been called:

1897-1903	Flathead Forest Reserve
1903-1907	Lewis & Clarke Forest Reserve North
1907-1908	Lewis & Clark National Forest North
1908-1933	Blackfeet National Forest
1933-present	Flathead National Forest

The south portion (South Fork, Middle Fork) has been called:

1897-1903	Lewis & Clarke Forest Reserve
1903-1907	Lewis & Clarke Forest Reserve South
1907-1908	Lewis & Clark National Forest South
1908-present	Flathead National Forest

Throughout this historical overview, the appropriate name of the forest reserve or national forest is used when discussing an event at a specific date and location. The name "Flathead National Forest" is used when discussing general events on the Forest; in these cases, it implies the present boundaries and thus would include both the north and south halves of the Forest but not the lands transferred during the historic period to other agencies or national Forests.

The boundaries of the Flathead National Forest have changed greatly over the decades. The current (1985) boundaries are shown in Figure 1.

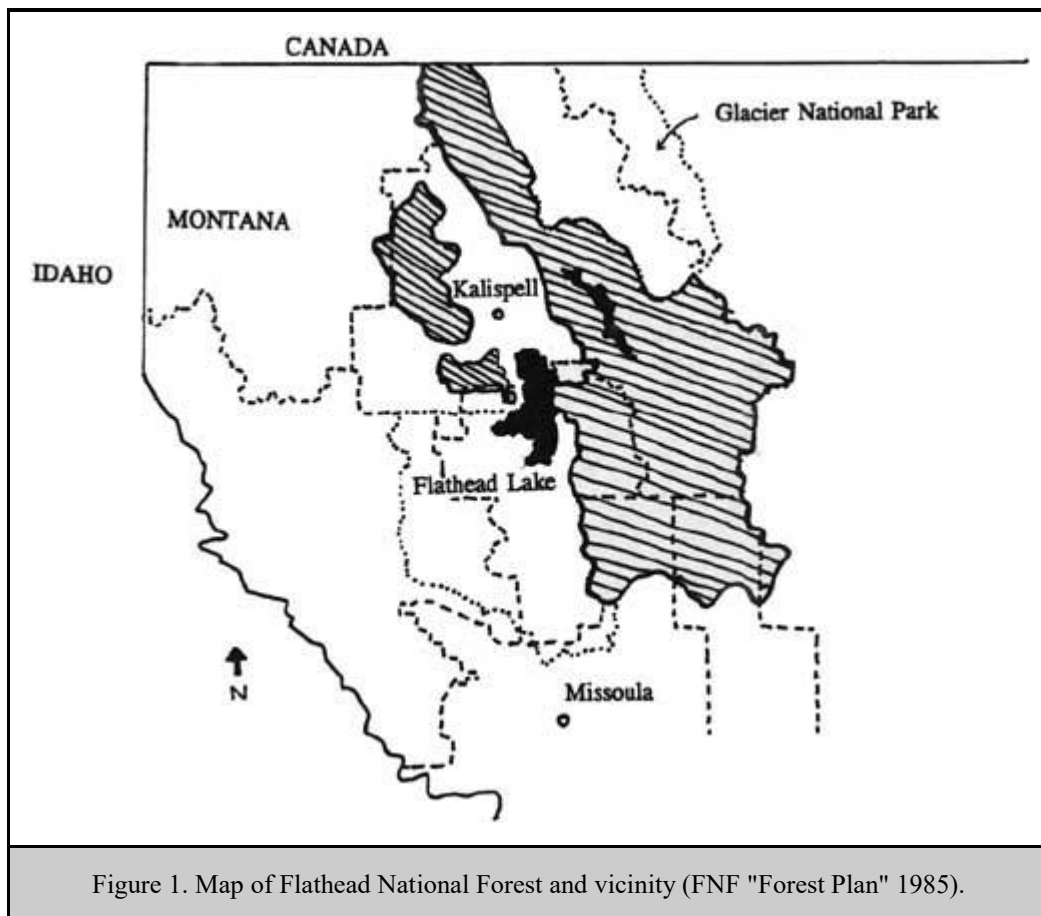


Figure 1. Map of Flathead National Forest and vicinity (FNF "Forest Plan" 1985).

THE FUR TRADE

Introduction

Northwestern Montana was one of the last regions of the lower 48 states to be settled by Euroamericans. A fashion in gentlemen's hats made of beaver skins led Europeans to the northwestern reaches of the continent, including the area now known as Montana. Fur traders entered the northern Rockies wilderness to make profits for capitalist companies chartered by the governments of western Europe. Along the western slope of the northern Rockies, British companies were the dominant force in exploiting the fur-bearing resources. By the 1830s, however, due to the whims of fashion in Europe and to the depletion of the beaver, the fur trade was declining. Settlers had not yet entered the Inland Empire in any considerable numbers. Despite the decline, in 1847 the Hudson's Bay Company (HBC) founded a trading post in the Mission Valley called Fort Connah. They also operated a seasonal post in the Tobacco Plains area for about 15 years, and possibly one near the head of Flathead Lake for a short time (see Figure 2). Kootenai and other Native Americans traded furs and buffalo products at these posts (see Figure 3). While they were active in the area, the fur traders discouraged Euroamerican settlement in western Montana.

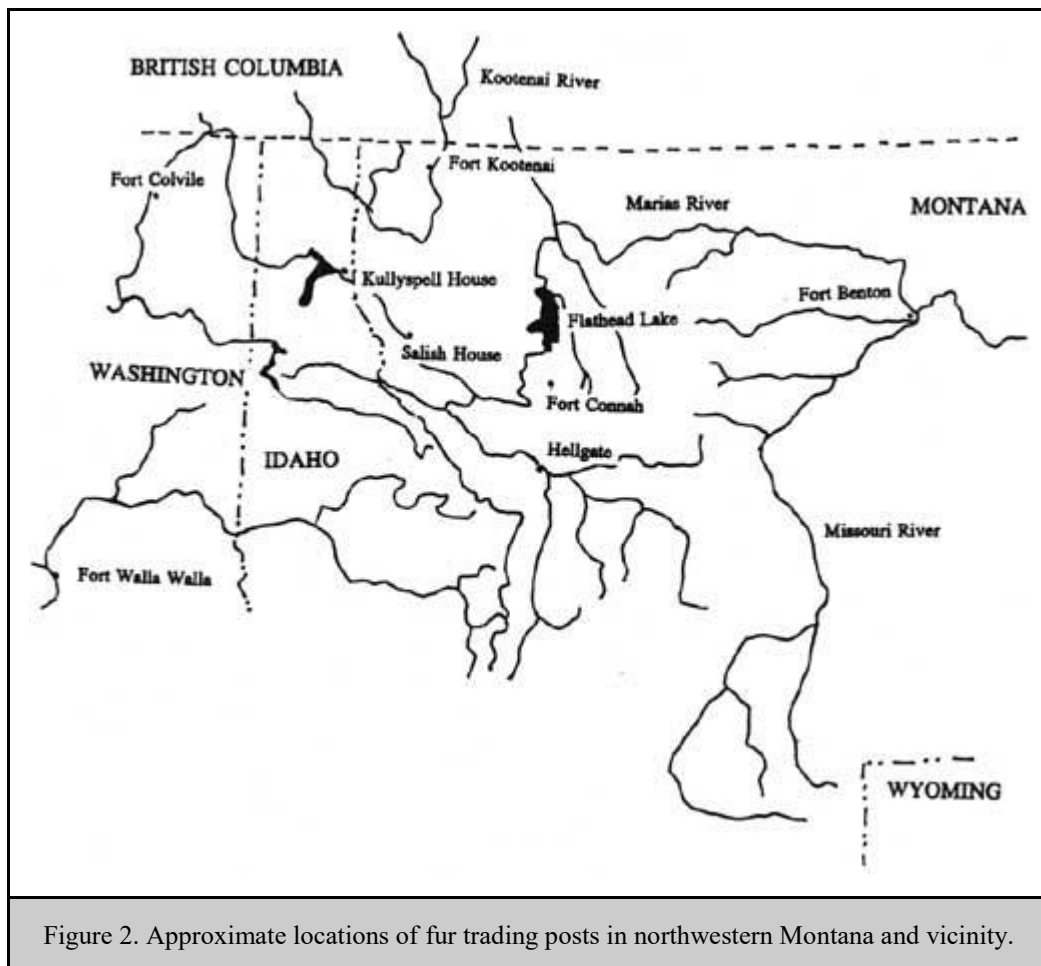
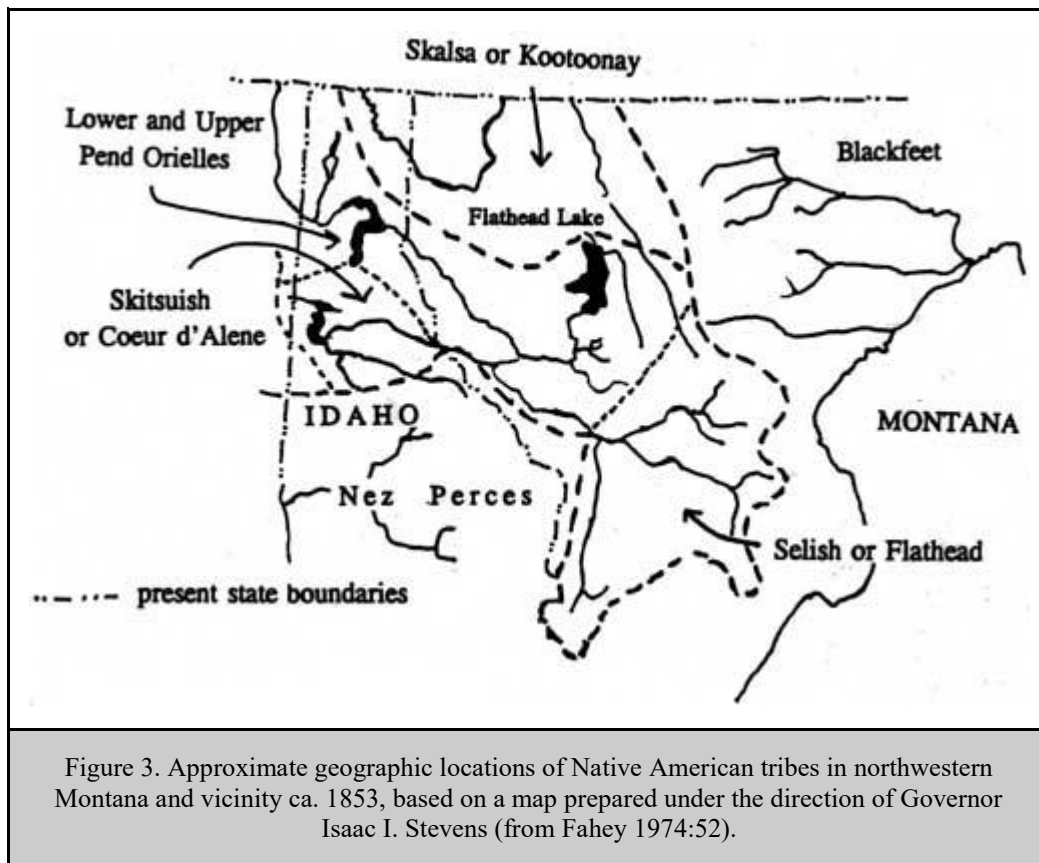


Figure 2. Approximate locations of fur trading posts in northwestern Montana and vicinity.



Physical remains of the fur trade era are difficult to verify on the Flathead National Forest. To the south, in the Mission Valley, the site of Fort Connah is well documented, and sites of other trading posts have been tentatively identified, such as Fort Kootenai near Eureka.

The Fur Trade

In the early 1800s, President Thomas Jefferson sent two American explorers, Meriwether Lewis and William Clark, on a cross-country journey west to the Pacific Ocean. The Lewis and Clark expedition of 1804-1806 did not pass through the Flathead Valley, but their trip influenced its later development. The journey of these men and their companions helped ensure American control of the entire area by strengthening U. S. claims to the Pacific Northwest and by establishing relations with many powerful Indian tribes. It also ended speculation about a possible Northwest Passage. Attention soon turned to the abundant natural resources in the area traversed and described by Lewis and Clark. Entrepreneurs and adventurers alike were attracted to this newly "discovered" region (Baker et al. 1993:18, 22).

The hostility of the Blackfeet and others on the plains east of the Rocky Mountains led to a relatively slow exploration of northwestern Montana by the large fur companies and independent trappers. Seeking a safer route, the Canadian-based fur companies reached Oregon Territory by crossing the mountains north of the border and traveling up the Columbia and Kootenai Rivers from Canada, avoiding the hostile Blackfeet. As a result, the fur trade first entered the western

slopes of the northern Rockies from British territory in the north (Athearn 1960:32; Sheire 1970:66, 68-69).

Two British companies, the Hudson's Bay Company (HBC) and the North West Company, had been competing for the fur trade east of the Rockies since about 1784. Each had continually expanded westward across what is now Canada. The latter company reached the Rocky Mountains by 1799 (Biggar 1950:39; Schaeffer 1966:1).

In 1807 Manuel Lisa built the first fur post in what is now Montana, at the junction of the Yellowstone and Big Horn Rivers, for the Missouri Fur Company. The first American post west of the Rockies was established two years later on the north fork of the Snake River but was abandoned soon after. American fur traders on the Missouri River did not penetrate the northern Rockies, however (Toole 1959:43-45).

In the 1800s these large fur companies obtained furs by several methods. One method was trading overseas goods for furs with Native Americans. Another was employing hunters and trappers who worked for fixed wages. The third was to trade for furs from free hunters and trappers at trading posts, rendezvous, or in St. Louis. "Free hunters" and "free trappers" worked as private individuals, generally dealing only in the finer kinds of fur.

It did not take the British fur traders long to discover the resources of the upper Columbia River drainage, which includes present-day northwestern Montana. Two French-Canadian traders working for the North West company were reportedly the first to cross the Rocky Mountains into the western interior. They spent the winter of 1800-1801 with a number of Kootenai, probably in the Tobacco Plains area (Schaeffer 1966:1, 9). According to fur trade historian Hiram Chittenden, the upper Columbia River was a profitable region for the North West Company and the HBC. The Flathead Lake area, he commented, had "hundreds of the finest streams in the mountains. It was the home of those staunch friends of the whites, the Flathead Indians, and was a favorite haunt of the hunter and trapper" (Chittenden 1954:787).

The North West Company was managed by a group of Scottish men who employed French traders. The company hired Welsh geographer David Thompson to explore the country in the vicinity of the 49th parallel (now the international boundary) and to identify suitable locations for the company's trading posts. Thompson traveled up the Kootenai River into Montana several times between 1808 and 1812, establishing his first trading post in the vicinity of present-day Libby, Montana. In 1811, he returned to the Columbia River headwaters to recruit a few "free hunters" who were already operating in the Rockies. Most were Iroquois, but some were of mixed French-Canadian and Native American descent or of European descent. Iroquois traders were in the region by 1800 or so; they may have been the first traders to anger the Blackfeet by taking arms across the Rockies into Flathead-Kootenai country. Some of Thompson's men remained in the area that later became Montana. Jocko Finlay, for example, later traded in the Mission Valley (Chittenden 1954:89; Bergman 1962:12, 15; Rich 1959:239; O. Johnson 1969:49).

Although the Columbia River fur trade was dominated by the British companies, some Americans attempted to compete in the region. John Jacob Astor's men established a trading post

at the mouth of the Columbia River in 1812, but the War of 1812 forced the sale of the fort to the rival North West Company. Astor's Pacific Fur Company also established competing trading posts in the interior near Spokane and among the Kootenai and Flatheads, but soon the North West Company bought out the Pacific Fur Company (M. C. White 1950:149-150; Historical Research Associates 1977:4).

The rival fur companies watched each others' movements closely. In 1810 the HBC sent clerk Joseph Howse to report on David Thompson's movements (and the North West Company likewise sent a man to shadow Howse). The location of Howse House, built by Howse and occupied 1810-1811, has not been confirmed. Some argue that it was located at the head of Flathead Lake, based on an 1814 map, but other evidence points elsewhere. The cabin (the first HBC post west of the Rockies) was probably built in the vicinity of Lake Pend Oreille in Idaho, on the Kootenai River near the later town of Jennings, or along the Clark Fork River in Montana. After Joseph Howse's trip into the area, the HBC abandoned the western slope of the Rockies to the North West Company (Biggar 1950:46; O. Johnson 1969:214 fn; Braunberger & White 1964:29; Campbell 1957: 182).

In 1812 David Thompson ascended the terminal moraine that dams Flathead Lake near Polson. After looking across the lake, which he called Saleesh Lake, he wrote, "all the ranges have many hollows, swellings - & Lawns more or less sloping." Thompson retired later that year to Montreal and never returned to the Pacific Northwest (Thompson 1985:25).

Although Thompson was the first Euroamerican of record to see Flathead Lake, it is likely that others had visited it before him. Finan McDonald spent the winter of 1808-09 on the Kootenai River above Kootenai Falls and the summer of 1810 on the Flathead River near the mouth of the Jocko. One of the earliest recorded trips into northwestern Montana was that of Finan McDonald, two French-Canadians, and 150 Flatheads. McDonald later became an important HBC fur trader in the lower Flathead Valley. In 1810 the large group crossed the Rockies at a "wide defile of easy passage" (probably Marias Pass) from the west and hunted buffalo on the plains. They were attacked by Piegiens but held their position with firearms. The McDonald party would have traveled along Flathead Lake to reach the pass (M. C. White 1950:214; Buchholtz 1976a: 17, 19; Robinson 1960:8).

In 1821 the two rival companies in the area, the HBC and the North West Company, combined under the name of the former. This merger invigorated the fur trade in the Flathead area. Before the combination, the North West Company had had a highly organized transportation system from the mouth of the Columbia River but had not shown profits in proportion, and the HBC "had little to its credit west of the mountains" (Rich 1959:563).

American companies again moved into the Rocky Mountain west and challenged British interests by 1820. Only a few Americans came into the lower Flathead, however, and they were just traveling through. Most traveled along the Flathead-Jocko River trail. In 1828 the Missouri Fur Company, an American company, sent Joshua Pilcher and others to the lower Flathead. They probably wintered at Flathead Lake, but in the spring of 1829 they left the area because of unsuccessful trading; the British were too firmly entrenched in the area. In addition, by this time

the fur trade in the Northwest was beginning to decline (Biggar 1950:53-54; M. C. White 1950:149-150; Buchholtz 1976a: 19).

Competition was further reduced in 1833 when the HBC and the American Fur Company each agreed to limit their areas of activity. In 1834 the Rocky Mountain Fur Company went out of business, but American adventurers continued to invade the lands west of the mountains and force more liberal treatment of both Native American and Euroamerican trappers (Lewis & Phillips 1923:46).

Between 1813 and 1823 the British companies practiced the brigade system of trapping, sending out groups of at least 50 men to trap entire areas. After the merger with the HBC in 1821, the new HBC discouraged American intrusion in the area by expanding the brigade system in the northern Rockies to create a buffer zone free of beavers. HBC company agent John Work led the "Flathead Brigade" during the 1820s and trapped much of the area west of the Divide in today's Montana, hoping to deplete the beaver resource and discourage Americans from entering the area (Biggar 1950:51; Baker et al. 1993:24-25; Buchholtz 1976a: 19).

The North West Company, on the other hand, used Native Americans rather than voyageurs to trap furs. The Native Americans of the area were considered to be "not vigorous fur hunters." The North West Company brought in some Iroquois to teach the local population how to hunt and trap (Burlingame 1957:I, 81; Chittenden 1954 I:xvi).

The HBC enjoyed a good trade relationship with the Flathead, Pend d'Oreille, and Kootenai. These tribes hunted buffalo regularly and received a fair trade for buffalo products. The latter half of October generally marked the opening of beaver trapping season (if taken in the summer, the pelt would be inferior). In the 1820s the trade with the Native Americans in Flathead and Kootenay country was mostly in guns, ammunition, kettles, knives, and tobacco. Other items traded included cloth, buttons, beads, vests, axes, flour, salt, pepper, coffee, tobacco, and liquor (Wright 1966:13; Partoll 1939:405; Alexander Ross' Flathead Journal, B.69/a/1, HBC; Robbin 1985:18).

The HBC operated a trading post in the Mission Valley called Fort Connah from 1847 until 1871 (see Figure 4). The post replaced the Flathead Post near today's Thompson Falls; it was located farther east in order to counter competition with American fur traders. Like other trading posts, it was strategically placed at the junction of major travel routes where aboriginal territories overlapped. The British company opened the post on American territory the year after the 1846 treaty was signed defining the international boundary as the 49th parallel. It took many years, however, to arrange for the post to be closed and the HBC to be compensated for its property on American soil. For a number of years Fort Connah supplied the Colville (Washington) district with certain products not easily obtained elsewhere, including dried buffalo meat, pemmican, buffalo fat, tallow, horse accessories, par-fleches, saddle blankets, dressed skins, and rawhide and buffalo hair cords. These items were important since they were necessary for travel on horseback and were not easily available elsewhere (Partoll 1939:402-404; Biggar 1950:57).



Figure 4. Reproduction of Peter Peterson Tom's water color of Fort Connah on the Flathead Indian Reservation, 1865 (courtesy of Mansfield Library, University of Montana, Missoula).

When Fort Connah was established in the lower Flathead, the population of the area was relatively low and was almost totally Native American. In 1846 a clerk at Fort Connah noted that the Euroamerican population in the region was about 15, and the Native Americans in the Flathead Confederacy included about 450 Flatheads, 600 Kalispels, and 350 Kootenais. Trade, however, was brisk. Duncan McDonald reported that Fort Connah annually purchased about 5,000 beaver pelts, plus other skins such as otter, badger, fisher, and buffalo products. In 1834 the beaver harvest from HBC domains totaled 57,393 pelts, of which about 21,000 came from the Columbia River system (Robbin 1985:17; McCurdy 1976:75; Lewis 1923:47).

Within a few years, Fort Connah faced competition and increased settlement of the area, both damaging to the fur trade. In fact, the HBC actively opposed settlement of the areas in which they traded. In 1850 John Owen established a trading post in the Bitterroot at the site of St. Mary's Mission (which had been closed largely due to Blackfeet hostility). Fort Connah became less secluded because of the Stevens railroad survey of 1853-1854 and the founding of St. Ignatius Mission about six miles south of the fort in 1854. The 1855 treaty with various tribes reduced the tribes' dependence on hunting and trapping. The building of the Mullan Road 40 miles to the south and the founding of Hellgate in 1860 and Frenchtown in 1862 also reduced Fort Connah's isolation. In the 1860s the discovery of gold in British Columbia brought miners through the lower Flathead Valley and revived trade, but only briefly. The HBC claims were settled in 1869, and Fort Connah closed its doors permanently in 1871 (Partoll 1939:403, 405-409, 412).

The HBC operated one other trading post in the area, about 90 miles north of Fort Connah. Fort Kootenai was only open seasonally, and it operated late in the fur trade period. The company traders operated in various places in Tobacco Plains just south of the Canadian boundary beginning in approximately 1846. The post was moved north of the line in 1860, where it served the Wild Horse miners in British Columbia until it closed in 1871. An HBC trader would come in from Fort Colville in the fall, trade throughout the winter, and return to Colville (a 16-day journey with packs) in the spring. The post was quite isolated in the winters; during the winter of 1858-59 trader Scotty Linklater reported seeing only 3 parties of Euroamericans in the area. In 1859, about 300 Kootenai were reportedly living in the Tobacco Plains area, and about 700 elsewhere (Partoll 1939:405; Blakiston 1859:334; "Diary" 1940:329).

In 1859 Fort Kootenai trader Linklater transported to Fort Colville the skins of 220 bear, 800 marten, 500 beaver, and 2,000 muskrats, plus moose, elk, and buffalo hides. The Kootenai, every spring and fall and sometimes in late winter as well, would cross the mountains to the plains to hunt buffalo. Some examples of the exchanges at Fort Kootenai are as follows: a three-point blanket for 3 bear skins or 12 marten skins, one charge of powder and ball for a muskrat skin, a file or knife for a beaver skin, and 40 charges of powder and ball for a buffalo skin. Linklater reported that the net profit for the trading at his post was about 90% ("Diary" 1940:328-329; Blakiston 1859:334).

Other short-lived HBC trading posts have been reported in the Flathead Valley. These include one located on the lower west side of the upper Flathead (operated in 1844 by Angus McDonald and later transferred to Fort Connah) and another at Red Meadow in the North Fork. In 1867 Laughlin McLaurin was reportedly running a trading post on Ashley Creek (near today's Kalispell) for the HBC (Flathead County Superintendent 1956:17; Schafer 1973:2; Shaw 1967:3). Although the fur traders tended to discourage settlement of western Montana by Euroamericans, they could not, in the end, prevent the exploration and gradual settlement of the area by miners, ranchers, and others.

MISSIONARY ACTIVITY AND EARLY EXPLORATION

Introduction

Jesuit missionaries and early explorers of the upper Flathead Valley such as railroad and government surveyors provided some of the first written descriptions of the area. The Louisiana Purchase of 1803 gave the United States possession of the Missouri Valley, but the Columbia River Basin, including northwestern Montana, was occupied jointly by British and Americans until the Oregon Treaty of 1846 gave the United States undisputed title to land south of the 49th parallel. Oregon Territory was created in 1848. Later subdivisions of this vast land meant that northwestern Montana at various times was part of Oregon Territory, Washington Territory, Idaho Territory, and then Montana Territory (created in 1864). Montana became a state in 1889. Many of the early scientific expeditions to the area were first and foremost boundary surveys. The various railroad and government surveyors provided written descriptions of northwestern Montana, but settlement remained low because of the great difficulties of access and discouraging reports about the long winters.

The original St. Ignatius Mission in the Mission Valley no longer exists to recall the Jesuit influence, but the more recent church is still in use.

Missionary Activity

Four Iroquois had come to live among the Flatheads in the early 1820s and had passed along their Catholic instruction. Beginning in 1831, the Flatheads sent several delegations east to St. Louis requesting Christian teachings. Pierre-Jean DeSmet was the first Jesuit in Montana, arriving in the Bitterroot Valley in 1840. St. Mary's Mission, located in the Bitterroot Valley, closed in 1850 due to Blackfeet hostility, and the missionaries sold the property to John Owen, an American trader. In 1866 a new mission opened there again. The St. Ignatius Mission, founded south of Flathead Lake in 1854, served Flathead, Kootenai and Pend d'Oreilles. In 1855, over 1,000 Native Americans of various tribes settled in the vicinity of the mission in the lower Flathead Valley, and many took up an agriculture-based way of life (Schoenberg 1960:5, 19, 21, 24-25; Toole 1959:57).

The Jesuit missionaries extended their influence throughout the area that is now western Montana. For example, in 1842 Father DeSmet visited a camp of 30 lodges northwest of Flathead Lake (in the area of today's Kila). Missionaries regularly visited the Kootenai living in the Tobacco Plains area, and in the spring of 1857 the Kootenai constructed a chapel near Fort Kootenai, the HBC trading post. The Jesuits abandoned this chapel a few years later, however (O. Johnson 1950:12-14).

Railroad Surveys

Some of the early government surveys in northwestern Montana were associated with the building of railroad lines across the United States and Canada. Spurred by increasing western

settlement, the United States government hoped to build a transcontinental railroad in the 1850s. Governor Isaac Stevens of Washington Territory was in charge of the northernmost railroad survey from the headwaters of the Mississippi to Puget Sound (Hamilton 1957:94).

Stevens detached Assistant Engineer A. W. Tinkham to explore a route from the Blackfoot River west to the Jocko. Tinkham and his party missed their intended route and followed the Swan River north instead. They then turned west and "chopped" their way over the Missions into the Flathead Valley, where they headed south. Tinkham was next assigned to find a suitable pass through the Rockies. In 1853 he and a small party traveled up the Flathead River to Flathead Lake and along its western shore. North of Flathead Lake, he reported:

we...emerge upon an open prairie bottom of good soil...Trail on the right bank of the river, but not in sight of it. High, nearly level ground, partly prairie, partly wood land, extends to where Flathead river issues from the mountain ridge on its eastern side [Bad Rock Canyon]. Good road to this point. Winding on the base of the mountain, the trail is rocky and very rough, but after a short distance the mountains again recede from the river. The same nearly level upland is renewed. Henceforward, to the prairie east of the Rocky mountains, the trail is absent; always woods. Trail to camp much obstructed by fallen timber (from US Explorations and Surveys, 1853-56, part one of vol. I:372, in Vaught Papers 1/11).

Tinkham and his party followed the Middle Fork up Nyack Creek and over Cut Bank Pass, and then they continued on east to Fort Benton thinking they had crossed the pass known as Marias Pass, which was actually farther south. The next year railroad surveyor John Doty approached Marias Pass from the west but did not cross over it because of a shortage of time (Hamilton 1957:94-95, 112-116; Sheire 1970:76-78; Buchholtz 1976a:23).

In 1854 John Mullan set out to find a practical route from the north end of the Flathead Valley via the Kootenai River to the Spokane area. He and his companions traveled up the west shore of Flathead Lake and continued north along the Stillwater River (which he called the Maple. River) to the divide between the Flathead and Kootenai drainages. In his report, Mullan commented on the "Rugged, snow-capped mountains" to the east and north and the "excessively thick forest" through which they proceeded north. Mullan felt this was not a favorable route, but years later, in 1904, the Great Northern Railway was relocated to this route (Hamilton 1957:124-125; I. Stevens 1860:179).

Despite these 1850s surveys through the Flathead Valley, the first American transcontinental railroad was built far to the south (it ran through Utah). The Central Pacific Railroad, as it was called, was not completed until 1869 (Thompson 1985:84).

In 1882 professor and world explorer Raphael Pumpelly visited the area on behalf of Henry Villard, a railroad magnate who was interested in the resources of the areas contiguous to the Northern Pacific Railroad line being built to the south of Flathead Lake. The party was stopped by heavy snows. Pumpelly returned in 1883 with a group that included William Logan (later the first superintendent of Glacier National Park). The group crossed Cut Bank Pass and helped to

publicize the region made more accessible by the railroad line to the south (Buchholtz 1976a:32; Sheire 1970:103-105).

The British were also searching in the 1850s for railroad passes through the Rockies. John Palliser, an Irish country gentleman who delighted in buffalo hunting and explorations, led an expedition that explored the British prairies north of the border looking for practical passes across the Rockies (see Figure 5). His magnetic observer, Lt. Thomas Blakiston, crossed North Kootenay Pass in 1858, following the Wigwam to the Kootenai River. On his return trip he crossed the Whitefish Divide via Trail Creek, along the way naming Waterton Lakes for a celebrated British naturalist, Charles Waterton (Spry 1964:2, 164, 169, 174; Thompson 1985:72-73, 76-78; Blakiston 1859:320-321, 327-334, 337, 339). Blakiston was one of the first recorded travelers through the North Fork of the Flathead on the U. S. side of the boundary.



Figure 5. John Palliser (from watercolor by Mary Severn, reproduced in Spry 1964).

International Boundary Surveys

Between 1857 and 1860, British and American crews surveyed the international boundary (the 49th parallel) traveling east from the Pacific Ocean to the Rockies and west from Lake of the

Woods, Minnesota, to the summit of the Rockies. The crews included specialists such as astronomers, surveyors, naturalists, geologists, surgeons, artists, and interpreters who all helped describe the area to outsiders. The survey parties cleared a 40' swath along much of the boundary, sometimes in parallel lines when their astronomical observations differed. While in the headwaters of the Columbia River, the British used the Kootenai River as its main source of supplies. The Americans used the Grave Creek trail from Tobacco Plains and also traveled along the North Fork (Thompson 1985:96-97, 99-101).

In the early 1900s the international boundary line was resurveyed and new concrete monuments replaced the original piles of stones (see Figure 6). Joe Eastland, a guide for the United States Geological Survey (USGS) survey crew under a man named Chapman, described the survey as follows:

Chapman was a good man but he seemed to be out to make a record. He had the finest bunch of pack mules I ever saw - seventeen hands high and they were supposed to jump anything they could see over; we paid no attention to trails. Besides carrying the grub and camp equipment, these mules carried the transits and other instruments, oats for feed, and cement and water to make altitude monuments on all the highest peaks. The pack bags for carrying cement and water were made of heavy solid leather. We usually worked from daylight to dark (O. Johnson 1950:264).

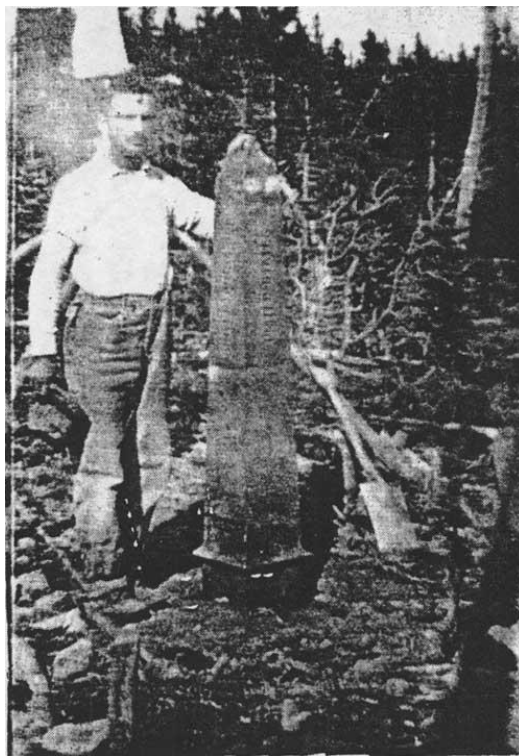


Figure 6. Placing of concrete boundary monument in area now within Glacier National Park (courtesy of Glacier National Park, West Glacier).

Other Early Explorations

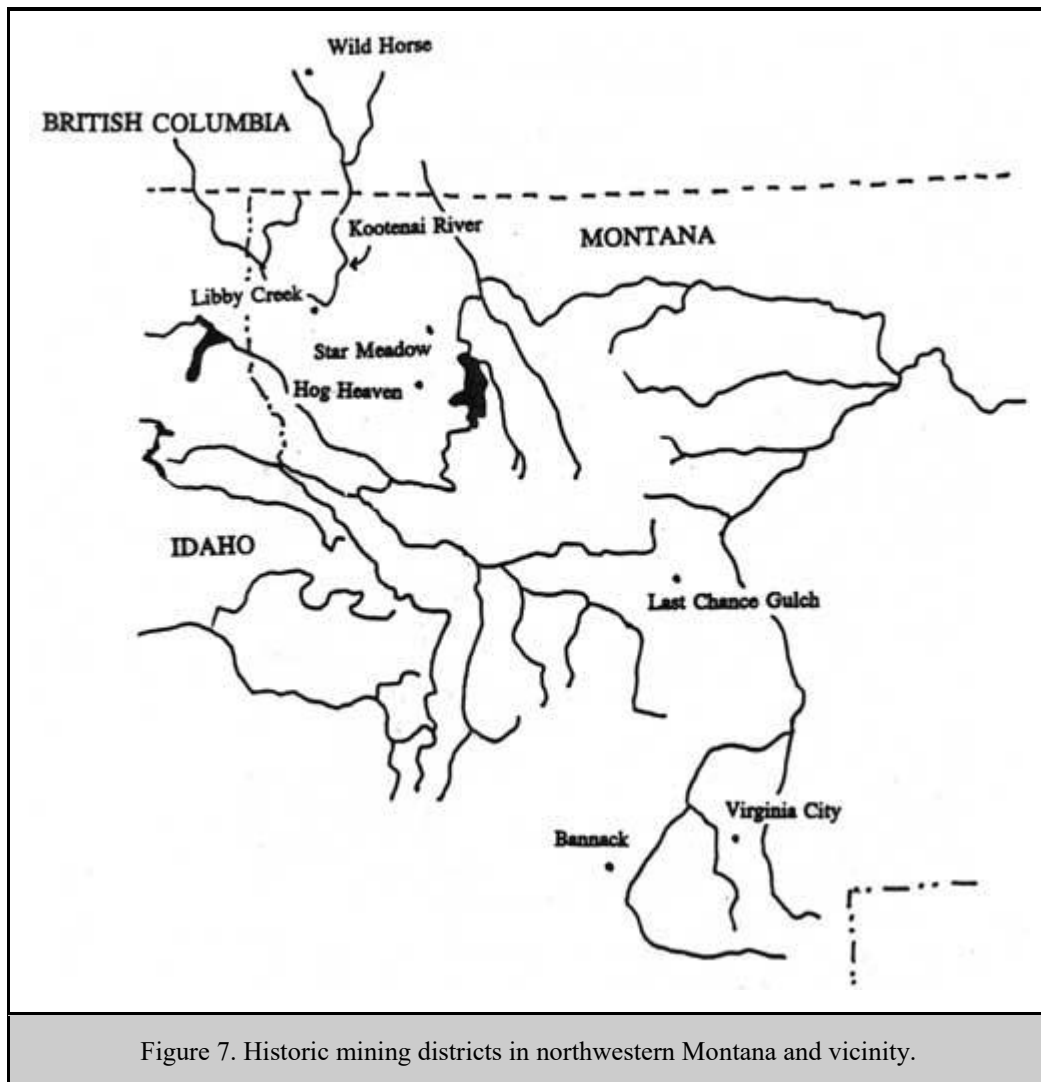
In 1873 Lt. Charles A. Woodruff and Lt. John T. Van Orsdale returned from a military reconnaissance to Fort Colville via the Flathead Valley. They traveled up the Middle Fork to the mouth of Nyack Creek, probably crossing over Pitamakin Pass. On their trip they named Lake Terry - now known as Lake McDonald - in honor of a well-known western general named Alfred Terry. In 1883 Van Orsdale published a letter in a Fort Benton newspaper describing the scenery of the area and recommending that it be set aside as a national park. He was the first to do so in writing (Sheire 1970:97-98).

In 1890 an Army detachment of African-American soldiers under Lt. George P. Ahern explored the mountains along the Canadian border. They traveled up the Belly River, crossed Ahern Pass, and continued to the Camas Creek Valley of the North Fork of the Flathead. With axemen cutting out the way ahead of them, they covered a total of about 370 miles on foot or in the saddle. At the end of their trip they emerged into the Flathead Valley, which one of the travelers described as follows: "Dense forests of pine, spruce, hemlock, etc., crowd the valley of the Flathead and those of its tributaries on the east down nearly to Flathead lake. Here on the prairie-like openings a few ranches have been established" (Culver 1891:188-193).

MINING

Introduction

The Flathead Valley has never experienced a major mining boom. In the early years, the area was most closely connected to the rush to the diggings at Wild Horse Creek in British Columbia in 1864 (see Figure 7). The development of mining districts in the Flathead was hampered by transportation and marketing challenges. The only mining district to ship significant quantities of ore was Hog Heaven, which operated in the late 1920s through 1946.



During the 1930s there was a resurgence of interest in mining among unemployed people looking for ways to supplement their incomes. Local men and women prospected in the mountains of the Flathead National Forest, but as in earlier decades they generally had little success. Only one mining claim on the Flathead National Forest has been patented (the Baptiste

claim with copper values near Baptiste Mountain). Other claims have been staked, but the land is still within the national forest system.

Evidence of mining activity on the Forest is not as rich as it is in other parts of Montana, generally because the Flathead did not experience an extensive mining boom. Prospectors' pits and cabins can still be found, however, and remains of mine development in the Hog Heaven and Star Meadow mining districts exist today. Most of the evidence of the coal mining in the North Fork is now gone.

Oil Fields

The founding of Columbia Falls in 1891 and the arrival of the Great Northern Railway in the Flathead Valley that same year led to increased interest in the natural resources, particularly mineral, up the North Fork of the Flathead. In 1892 prospectors filed the first oil claims in Montana, which were located in the Kintla Lake area of the North Fork within what is now Glacier National Park. Although Native Americans and fur trappers had reportedly known of oil seeps in the area for some time, these prospectors were alerted by bear hides sold at Tobacco Plains that smelled of kerosene. In 1892 a local newspaper reported that the North Fork valley had been taken up by settlers hoping to find oil beneath their homesteads and waiting to hear of a railroad coming up the valley. Neither happened. A shortage of capital combined with the financial panic of 1893 and the subsequent depression led to the temporary abandonment of the oil district in the 1890s ("Flathead Coal" 1892:1; DeSanto 1985:26-28; Willis 1901:782; Bick 1986:5).

In 1900 interest in the Kintla oil fields revived. A group of Butte businessmen organized the Butte Oil Company and the next year filed a claim on land near Kintla Lake. This area was practically inaccessible at the time; it was reached from Tobacco Plains via a trail over the Whitefish Divide, along the "coal trail" on the west side of the North Fork, or along the "Canadian trail" on the east side of the river from Belton (now West Glacier). The Butte Oil Company therefore hired men to build a road north from Belton to the Kintla area. Workers completed a rough 8'-wide wagon road in 1901, and drilling machinery from Pennsylvania was hauled up to Kintla Lake along the road. Drilling began in 1901, other oil companies formed, and the Kintla oil boom was on (see Figure 8) (DeSanto 1985:28, 30, 31; J. B. Collins to John O. Bender, 10 August 1901, entry 13, box 5, RG 95, NA). Out-of-state boomers and oil promoters were putting "their ears to the ground listening for the sloshing of oil," and speculators (including local people) filed oil claims in the area (*Kalispell Bee*, 2 July 1901). In 1901 a magazine writer summed up the excitement over the Kintla oil fields as follows:

perhaps there is no more beautiful region in the whole northwest than this virgin wilderness, which the enterprise of man will soon convert into a populous and busy territory with all of the industries of a great oil field in full blast (quoted in Bick 1986:10).

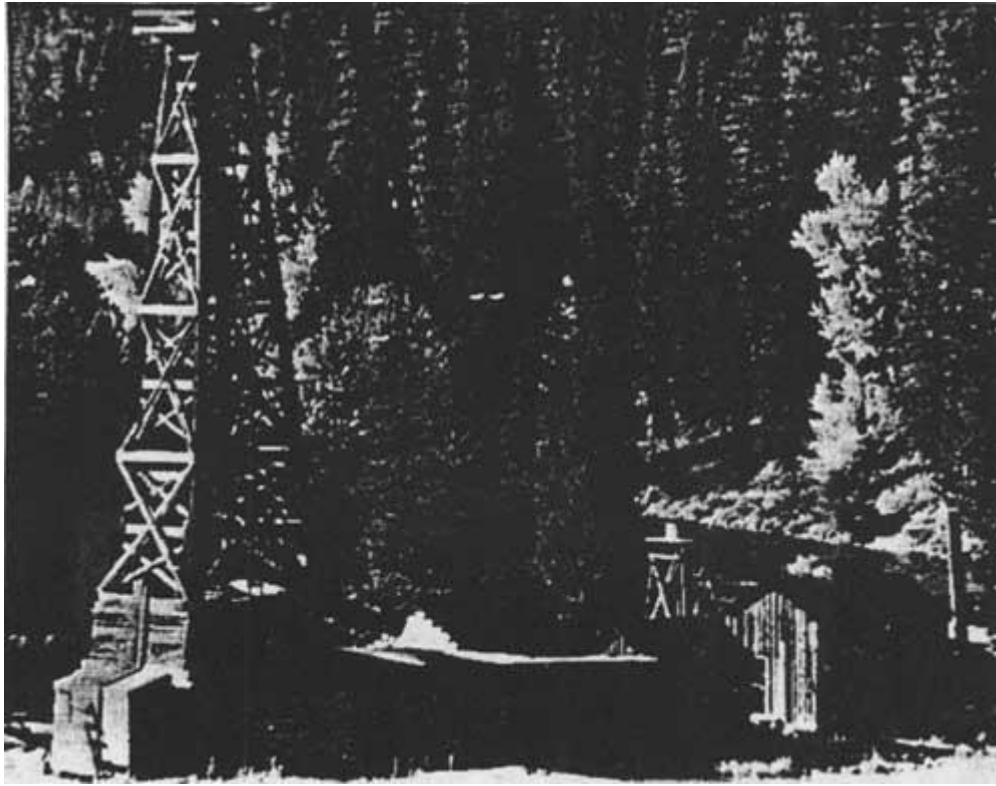


Figure 8. Kintla oil well, located near mouth of Kintla Creek, 1904 (in today's Glacier National Park) (courtesy of the Mansfield Library, University of Montana, Missoula).

The first oil well on the shore of Kintla Lake reached a final depth of 1400', but in the winter of 1902-03 almost the whole plant burned. The wells never reached a profitable pocket of oil. In 1912 all claims of the Butte Oil Company were declared void. Another company built a derrick near the North Fork River several miles below Kintla Creek, but it stopped drilling in 1903 due to a lack of capital (DeSanto 1985, 34-36).

Canadians also got involved in oil exploration and drilling in the area. In late 1901 a Canadian company began drilling a few miles from the townsite of Waterton. In 1913 there was another boom of coal and oil exploration in the area as more geological surveys were conducted. A wagon road was built from Corbin over Flathead Pass south to the boundary, and a survey for a railroad line paralleled the road. By 1930 three oil and gas companies were once again active on the Canadian side of the North Fork, and at least three oil derricks were built. Exploration was spasmodic and was abandoned in the late 1930s, however, because the drilling did not define sizeable pockets of oil (Ringstad 1976:5).

Oil was discovered in the Swiftcurrent area on the east side of the Rockies in 1903, and a short-lived boom occurred there. After a few years production declined, however, as the wells were lost to penetrating water. As of 1911, there were over 200 mining claims in newly created Glacier National Park. Most of the valid claims were in the Kintla Lake area on the west side and

the Swiftcurrent and Lake Sherburne areas on the east side (Douma 1953:20-21; Buchholtz 1969: 13).

One Flathead Valley resident did do well on oil claims, but the claims were not in the Flathead. Charlie Emmons homesteaded in the Truman Creek area and later worked as a forest ranger for the Blackfeet National Forest. Emmons was a self-made practical geologist. With several other Kalispell residents he raised the money to bring experts from California to examine the Kevin-Sunburst oil and gas field, and then he gathered leases in the area. His company ended up realizing great profits (*Kalispell Times*, 4 December 1941).

In the late 1940s and early 1950s oil and gas companies pressured the Forest Service for leases in the Bob Marshall Wilderness. No leases were granted because they were seen as incompatible with wilderness preservation. Exploratory oil and gas work has been done on other drainages and on private land in various Flathead drainages (Shaw 1967:74, 121).

Coal Deposits

Another early boom in the North Fork of the Flathead revolved around the coal fields located near Coal Creek. Raphael Pumpelly on his 1883 trip through the northern Rockies identified the coal beds on west side of the North Fork, and local prospectors promoted and developed the beds. The Great Northern Railway (GNRR) needed coal for fuel but found the lignite coal in the North Fork unfit for railroad use. The Anaconda Copper Mining Company (ACM) also investigated, hoping the coal could be converted to coke and used in its smelting operations, but found the coal too low-grade for such use (Sheire 1970:195).

In 1887 seven men located coal claims on the Coal Banks at the urging of Marcus Daly of the ACM. They sold their holdings three years later to James Talbott and others of Columbia Falls' Northern Improvement Company for \$50,000. Talbott had a steamboat built to bring out the coal via the North Fork of the Flathead. In early 1892 the Oakes set out on its maiden (and only) voyage; it wrecked in rapids near the mouth of Canyon Creek, short of its destination. The next year Talbott brought out some coal on a raft, but after the second raft also wrecked he gave up on this method (*Inter Lake*, 5 December 1890; Johns 1943 III:38; Rognlien ca. 1940:1-7).

By 1892 the 102' Emerson tunnel had been drive into the bank, exposing about 30' of coal, and by 1906 several 20-50' tunnels had penetrated a number of outcrops. Eventually the First National Bank of Butte purchased the coal mine. After the county built the road to Coal Creek in the 1910s, Claude Elder leased the holdings. He operated the coal mine until 1942, selling coal as a heating fuel to hotels, hospitals, individuals, and so on in the Flathead Valley. At the start of World War II, when the demand for low-grade coal decreased, war-time labor shortages interfered with production, and the mine was shut down (Rowe 1906:49; "Flathead Coal" 1892:1; Glacier View Ranger District 1981:2, 5; Sundborg 1945:9).

Coal beds were also located in the South Fork drainage. In the summer of 1891 William Curran camped at the coal fields and used the coal for fire and blacksmithing. He and others also found gold- and silver-bearing quartz in the area. In 1892 Frank Linderman drove a tunnel on his coal claim in the South Fork and reported, "Men are going in, in great numbers, some with and some

without provisions." The Flathead National Forest's Coal Banks Ranger Station, 35 miles from Coram near the junction of the Echo Lake and the main South Fork trails, occupied land that had been claimed as coal lands since 1898. Beyond sinking a shaft about 10' in depth and relocating each year, however, no significant development work had been done by 1918. The Forest Service reported that the coal was low-grade lignite, lying in a small strata, and that even if a railroad were built, coal mining there would not be profitable ("New Mining Country" 1891; Johns 1943 VII: 115; Flathead National Forest "General Report" 1918).

Prospectors wandered all over the Flathead country in the 1890s. Coal was found on the first creek above Nyack (then known as Coal Creek), and in approximately 1910 the Ralston brothers attempted to develop a coal mine on the Middle Fork within the area that is now the Bob Marshall Wilderness (Vaught ca. 1943:281; Merriam 1966:21).

On the Canadian side of the international boundary, in the early 1900s a major outcropping located about 12 miles north of the border in the North Fork was mapped, but there was little development. The town of Fernie was founded in 1889 when a company was formed to mine coal in the area. By 1903 six mines had been developed in the Fernie area, and at least one other was still in operation in 1967 (Ringstad 1976:5; Fernie Historical Association 1967:25, 41).

Placer and Lode Mining

General

For almost a decade after the California gold rush started in 1848, mining was carried on extensively only within that state. In the 1860s, however, the industry expanded eastward into the Rockies. Fort Colville, for years the chief inland post of the HBC, became the first important center for mining development in the Inland Empire. Walla Walla, another important center, was founded in 1856 (Trimble 1914:7, 10-11, 15, 21).

The first gold in the future state of Montana was discovered in the early 1850s, but no rush of miners came into Montana until the strikes at Bannack City (1862), Alder Gulch (1863), and Last Chance Gulch (1864). From these mining towns prospectors ventured out looking for new lodes. Mining dramatically hastened the pace of development in the region. The large population increases led to increased demands for timber, transportation, and goods and services. Placer gold started the early rushes because it was easily recognizable and it could be extracted without large investments of capital.

The first gold stampede that directly affected the upper Flathead Valley was the rush to the Wild Horse diggings in British Columbia in 1864. The previous year two men had brought gold dust and nuggets found in what became known as Finlay Creek to the trader at Fort Kootenai in Tobacco Plains. Prospectors flooded into the area the next year, and a rich mining town sprang up. Most of the miners came from the United States, coming in from Walla Walla and the Idaho panhandle, but some traveled north through Montana. In 1865 there were over 5,000 miners in the area. This rush had the secondary effect of familiarizing some people with the upper Flathead country, and a number returned to the area to prospect after the profits at Wild Horse declined (Isch 1948:64; Graham 1945:126, 131, 132; Iverson n.d.:42).

There was also some mining activity to the west of the Flathead Valley during this period. By the fall of 1867 over 500 miners were working on Libby Creek (a second rush in that area began in 1885). A placer mining stampede reportedly occurred on Grave Creek on the west side of the Whitefish Divide in the early 1860s. The most productive mine in the Whitefish Divide was Independence, which yielded chalcopyrites of copper (a mineral consisting of copper-iron sulfide, an important ore of copper). Twelve men were working the mine in 1894 and shipping the ore by boat to Jennings (M. J. White 1993a:3; O. Johnson 1950:35-36; Wolle 1963:287). Many of the professional miners left the area in the late 1890s, however, pulled to the far north by the Klondike gold rush.

By 1870 the population of Montana territory was declining and so was its mining output. Fifteen years later, however, all had changed; the mines in the Anaconda-Butte area were so productive they were influencing world prices. Mining in Montana then took on a new form based on industrial centers and company towns (Paul 1963:143, 148).

Prospector's Life

The General Mining Act of 1872 made mineral lands a distinct class of public lands subject to sale under prices and requirements different from other lands. Any citizen finding a valuable mineral deposit on public land was entitled to the mineral without paying the government royalty or rent. He obtained title to the minerals by staking a claim and reporting the location to county officials. He was required to spend at least \$100 a year on labor and improvements. Each locator was allowed to claim 20 acres of placer ground. For lode claims, miners could claim 1500' along the vein and up to 300' on either side of the contour of the ledge. Miners and prospectors were granted free-use permits to log timber to develop their claims. Once the property was producing ore for shipment, however, they had to pay for this privilege (Dana 1980:27; Stuart 1913:157-58).

In Montana, the discoverer of a claim was entitled to one claim for discovery and one for preemption (all others were allowed only one claim). The miner had to mark the boundaries and post notices giving information on the claim. If locating a lode claim, the miner also had to sink a discovery shaft at or near the point of discovery going at least 10' vertically and/or horizontally. According to the 1872 law, a miner could obtain a patent for his claim by having it surveyed, completing at least \$500 in assessment work, filing appropriate notices, and paying \$5 per acre for a lode claim or \$2.50 per acre for placer ground.

Prospectors generally traveled in small, organized parties of between 5 and 50 men, and they were often experienced miners from California. The prospecting was seasonal, because they could not work when the streams froze (Trimble 1914:97, 223-224). Once prospectors located a claim, they generally sold it before development work began, lacking the money needed to develop mines themselves.

The most common source of placer gold found in Montana was the creek placer. In creek placers, the movement of water concentrated the gold on bedrock or in the gravels just above bedrock. A prospector panning for gold checked streambeds all along his route, panned the gravel in streambeds, and pecked at rock outcroppings and examined old streambeds. When he

found placer gold (versus "fool's gold," or iron pyrite) he staked a claim and recorded it. Then he might build rockers (long cradles in which the gravel and sand were rocked, the gold sinking to the bottom as water flowed through). Or, he might build sluices, long connected troughs with cleated bottoms that caught the gold particles. A sluice required large amounts of water (and thus ditches) and a crew of several men to operate.

Once the placer gold was exhausted from his claim, the miner would work his way upstream looking for the source of the gold. He would find lodes in the hills and stake off claims to outcrops, then dig prospect holes. He would also construct drifts by digging a tunnel into the bank of a gulch to reach pay gravel. Lode miners used hand drills and jacks to drill into rock. This was followed by blasting, with powder packed into each drill hole. Various technological changes improved the drilling and blasting operations.

Gold from lode mines had to be recovered by grinding or stamping to pulverize the rock. If the ore was refractory (if threads or small particles were imbedded in other rock), the valuable gold or silver had to be released by chemicals or by roasting in a smelter (Wolle 1963:15-16, 18).

The simplest way to crush the ore was by using an arrastra. The arrastra was a shallow circular pit paved with flat stones. A horse pulled a sweep attached to a heavy dragstone across the chunks of ore. When ground to a powder, the ore was mixed with water and mercury for further processing. Another method of crushing the ore was the stamp mill, which pounded the ore with iron-bottomed stamps. Silver combines readily with other minerals in its natural state, so it required a more difficult processing method than gold. After crushing, silver ore was amalgamated or roasted to form chlorides that were treated through pan amalgamation and further refined by smelting. Stamp mills and smelters required ready access to capital; lode mining is much larger in scale and capital requirements than placer mining.

Like trappers' cabins, a miner's cabin was not always very comfortable. As one old-timer put it:

As housekeepers the prospectors varied. On many a claim the cabin was as neat as a wild flower, but on some the mine tunnel was more livable than the cabin - where the dirt floor might be deep in discarded tin cans and clothing, the table never cleaned except to add a new layer of newspaper on top of the old, and the sour-dough jar green with mold (O. Johnson 1950:39).

The miner's life was often quite difficult. For example, a group of prospectors traveled to the North Fork of the Flathead from Missoula in 1867. Their leader, E. K. Jaques, was accidentally shot through both legs by one of his companions. The party camped through the winter while he healed, returning in the spring to the Flathead Valley (Buchholtz 1976a:28).

Placer and Lode Mining in the Flathead

The evidence of late-1800s prospecting and mining in the Flathead is scattered. "Dutch Lui" (also known as Luis Meyers) prospected in the northern Rockies beginning in 1885. In 1889, at the head of Copper (now Valentine) and Quartz creeks, he located a vein carrying gold, silver,

copper, and some lead. This started a minor boom as footloose prospectors came in to investigate (Buchholtz 1976a:31; Vaught ca. 1943:256, 366).

Another early trip into the region took place in 1876, when Texan William Veach and four other men headed to the North Fork to prospect. They prospected and trapped in the Logging Lake area, finding a 30-ounce nugget of gold near Quartz Lake and building a cabin there. Veach was the hunter and cook for the group; subsequently he returned to Texas (Veach 1939).

Evidence of very early prospecting was found in the area of Doris Creek off the South Fork, where hunters in 1898 found an old cabin with an adit nearby and piles of quartz studded with wire gold. Early prospectors also set up an arrastra to crush the ore on Fawn and Wounded Buck Creeks (there were probably others) (Green 1972 IV:122, 129, 131).

There has been quite a bit of mining activity northwest and southwest of Kalispell over the years. A sluice box and a diversion dam were installed on Herrig Creek west of Ashley Lake, for example. The Flathead Mine in the Hog Heaven district southwest of Kalispell was discovered in 1913 but remained idle until lessees discovered the main ore body in 1928. The Anaconda Copper Mining Company soon took over the lease and shipped high-grade ore intermittently, with most of the value in silver (they did not ship between 1930 and 1934 because of low silver prices). In the mid-1940s the mine was employing about 75 men. Three or four other mines were operating sporadically at that time, including the Ole Mine, about a mile directly west of the Flathead Mine, which had values in gold, silver, and lead (this was later developed again in the 1960s). The mine that produced more than 90% of the ore in the district, the Flathead Mine, closed in 1946 (Johns 1970:85, 137, 141; Sandvig 1947:35, 38; Sundborg 1945:59-60).

Several productive mines during the historic period were located in the Star Meadow mining district (see Figure 9). The Sullivan mine, which opened in the early 1890s, was located about 10 miles from Tally Lake. The copper ore was packed out by horses, but eventually the promising lead was cut off by a fault. In 1925 Glen Sucetti re-opened this mine and found a new lead of ore, and by 1934 he had constructed some buildings at the site ("Flathead's Mining" 1931:5; "Development" 1934:8).

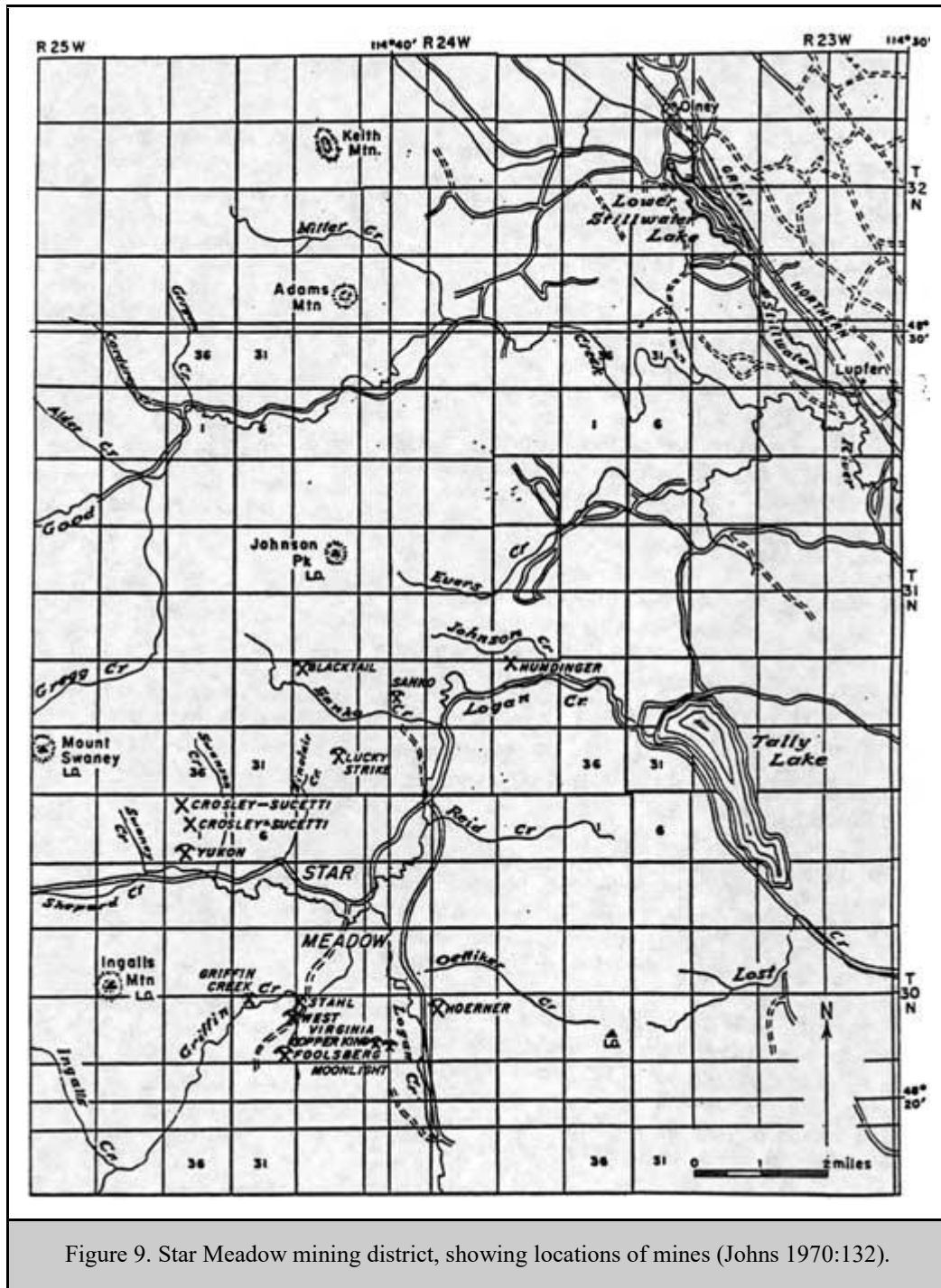


Figure 9. Star Meadow mining district, showing locations of mines (Johns 1970:132).

Other mines in the Tally Lake area were located in the vicinity of Logan Creek (named for miner and attorney Sidney Logan) and Sanko Creek (named for miner Fred Sanko). The Foolsberg and the West Virginia Mines were located on the ridge between Sullivan and Griffin Creeks. The former was developed in 1920, the latter in the 1890s. The Blacktail prospect was discovered after the 1936 Sanko Creek fire burned the vegetation that had been obscuring the copper-containing vein. A few other claims in the Star Meadow district produced some ore in the 1920s and 1930s. The valuable ore contained copper with some gold and silver. Many other mines were

developed but never went into production ("Tally Lake RD List of Names "in TLRD; Johns 1970:131-37).

The South Fork of the Flathead also had numerous mining claims for a time. In 1892 a local newspaper boasted that the South Fork "is now supposed to be one of the richest mineral regions in the State." In 1891 Baptiste Joyal and William Curran toured the South Fork, finding copper, silver, and gold, plus coal beds. By 1898, however, no ore had been shipped from the valley, and a surveyor passing through noted only about six cabins that were occupied seasonally by prospectors doing their assessment work. In 1913 another boom hit the South Fork, this time because of a copper strike about 35 miles south of Coram, with Felix Creek running through the center of the claims (Johns 1943 VII:39; Ayres "Lewis & Clarke" 1900:73; "Flathead Copper" 1913:1).

Baptiste Joyal (also known as XJoyal, Zeroyal, Zeroyle) trapped in the South Fork and was one of the first Euroamericans to live in the area. Like other prospectors, Joyal sometimes earned extra cash by working as a guide for miners. He guided two prosperous California miners across the Rockies by going up the South Fork and down the Sun River (Opalka 1983; Shaw 1967:46). Joyal died in the winter of 1909 in his cabin on Hoke Creek.

Another French-Canadian South Fork prospector was Felix Drollette. He worked Felix Basin and was the original prospector in Silver Basin, at the head of Logan Creek. A man named Harris had a cabin at the junction of Felix and Harris Creeks, and he had mine shafts at least 8 miles up the creek. Harris set up a tent camp in the Coram area, built a bunkhouse and a messhall in the area of the mine, and hired men to prospect the Hoke/Baptiste area, but he found only copper stain, no ore (Opalka n.d.; Opalka 1983; Martin 1983; Green 1972 IV: 133).

Farther up the South Fork, Levi Gaustadt filed a barite claim in 1958 on Black Bear Creek. Although the material was assayed as highly productive, the claim was never patented (Shaw 1967:22).

Prospectors spent long weeks searching the drainages of the Middle Fork of the Flathead for valuable minerals with little success. In 1899 there were reportedly several new claim stakes between Bear Creek and Java, and some copper claims were staked in 1898 on Summit Creek not far above Java. Several miners staked claims near Bear Creek on the Middle Fork, including Kalispell attorney Sidney Logan and nearby homesteaders Louise and Philip Giefer. Some mining claims were also located in the Belton and Essex areas (in fact, Almeda Lake may be named for a woman named Almeda who was listed as a mine claimant) (Ayres "Lewis & Clarke" 1900:37; Ayres "Flathead" 1900:313; Holterman 1985:19-20, 45).

Two French-Canadians named Pauket prospected in the 1890s all over the Flathead area. They located claims on Deerlick creek near Nyack in the Middle Fork, driving an adit in the face of a cliff. They spent a winter in Butte, as many Flathead miners did, and the next year sold out for \$8,000. In 1934 a claim near Garry Lookout above Nyack was worked, causing a minor rush of prospectors to the area, but most abandoned their prospects (Green 1972 IV: 134, 141).

Northeast of Eureka, prospectors staked several copper-silver-lead claims in the 1890s in the Bluebird Basin. During the summer of 1894, 12 men worked on the mine and shipped ore to Great Falls for processing. Profits were low over the years, and development plans were curtailed with the coming of World War I. In 1912 a mining claim was located near Upper Whitefish Lake with men digging a prospect tunnel 155' deep into the mountain. A little earlier, in 1905, the Lupfer Mining Company had claims eight miles northwest of Whitefish, but this company disappeared within a year. Charlie Oettiker, who homesteaded on Oettiker Creek, claimed to have found gold, silver, platinum, and uranium in an outcrop behind his cabin (O. Johnson 1950:37-38; Shea 1977:117; "Prospect Tunnel" 1912; Schafer 1973:67; Boettcher 1974:221). Other miners started excited rumors about finds, but the real money was actually made in real estate.

Very little prospecting or development work was ever done in the Swan Valley. In 1899, H. B. Ayres reported that there was no mining work or prospecting in the Swan. In 1908 Joe Waldbillig filed a mining claim at the mouth of Holland Lake, but he probably never worked it. There are a tunnel and track east of Owl Creek and abandoned mines on the west slopes of the Swan Range farther north, in the Lake Blaine area and on Columbia Mountain. One prospector who spent every summer in the Missions for 30-some years, reported that "all I got is a sore back" (Ayres "Lewis & Clarke" 1900:80; Wolff 1980:53; Beck 1981).

SETTLEMENT AND AGRICULTURE

Introduction

Since the flow of miners through the area in the 1860s, the location and growth of communities in northwestern Montana have depended on the location of the railroad and other transportation routes, the topography, the development of markets, and government land policies. The most significant influence on the settlement of the Flathead Valley was the coming of the Great Northern Railway to the valley in 1891. The Forest Homestead Act of 1906 encouraged settlement of agricultural land within national forests. These "forest homesteads" are discussed in a separate chapter.

Settlement Up to 1871

The original inhabitants of northwestern Montana were, of course, Native Americans. One of the centers of Kootenai activity was the Tobacco Plains along the Kootenai River. Prior to 1850 the Kootenai hunted seasonally at Flathead Lake, competing with the Pend d'Oreilles, but after that time they lived there permanently, replacing or intermixing with the original population (Malouf 1952:2). The fur trade brought to the Native Americans of northwestern Montana an influx of trade goods along with the replacement of the aboriginal economy with new materials, the hunting and trapping of game for material gain over long-term subsistence, and disease, oppressive government policies, and restrictions of their movements.

The only way to earn a living in the early 1850s was by hunting, trapping, or trading, or by working for someone else who hunted, trapped, or traded. In those years many people of French-Canadian, Scottish, and Iroquois heritage lived in western Montana, a legacy from the fur trade (Weisel 1955:xxiv, 48).

The Hellgate Treaty of 1855 established the Flathead Indian Reservation in the lower Flathead Valley for the Flathead (or Salish), Pend d'Oreille (or Kalispel), and Kootenai tribes. Most of the bands of these tribes slowly moved onto the Reservation. The creation of the Reservation opened the door to permanent non-Native American settlement of the valleys of western Montana. In 1887 the Dawes Act divided the rich bottomlands of the Reservation into individual allotments, and the land considered surplus was given to Euroamerican settlers (Historical Research Associates 1977:6-7).

John Owen established Fort Owen in the Bitterroot in 1850, and for a few years he traded with Native Americans, people of mixed descent, and the few Euroamericans in the area, all of whom paid mostly in livestock, furs, or labor. According to Owen's ledger and other sources, in 1851 the only Euroamericans in western Montana were a few Jesuits, HBC men, and about 15 others, including two mountain men. In 1860 Owen faced his first trading competition, when Frank Worden and Christopher Higgins built a trading post at Hellgate on the Mullan Road. From then on, Fort Owen was no longer the center of trade in the area (Weisel 1955:xxiii, xxx).

In 1858, the resident non-Native American population of Missoula County (all of northwestern Montana at that time) was approximately 200 people. Because the Oregon trail lay 200 miles south of western Montana, most emigrants never saw the region. The early settlement of western Montana was overshadowed by placer gold mining beginning in the early 1860s. The Mullan Road, built from 1859-62 between Fort Benton and Walla Walla, enabled the mining development of western Montana. During the 1860s, western Montana was not self-sufficient. Local flour and lumber and some agricultural products were available in the Missoula area, but all manufactured items had to be brought in. In 1870 the population of Missoula County was just over 2,500, but by 1880 it had hardly changed (these figures do not include the gold miners passing through the area) (Coon 1926:49-50, 53, 56-57, 68, 71).

The W. W. DeLacy map published in 1870 showed a "half-breed" settlement located north of Flathead Lake, where a Native American trail crossed Ashley Creek. The small settlement had been established several decades earlier. In 1845 two French Canadians joined the Kootenai living at the north end of the lake and built a cabin on Ashley Creek, spending most of a year there. Two years later, four more French Canadians arrived, including Louis Brun, a Quebequois, and his Kalispel wife Emily. When gold was discovered in California, they and other families, including a man named Benetsee Finley, left for the gold fields. Most of them returned to the Ashley Creek area in 1850, but the Bruns moved to the Jocko area and then Frenchtown. Men who came and returned to the Flathead in 1850 may have included Joe Ashley and Francois Grevelle, both of whom are mentioned often in histories of the early settlement of the Flathead Valley. When Lt. John Mullan passed through the upper Flathead Valley in 1854, he reported that "Our camping ground — was represented — by the Indians as a great resort of their tribe and the half-breeds of the country some years ago" (Holterman 1985:25; Shea 1977:37-38, 41; T. White 1964:27).

Joe Ashley, for whom Ashley Creek is named, had come to the Flathead in the mid-1840s. He and Angus McDonald (an HBC trader), Peter Irvine (a Shetlander), Francois Finley, and Laughlin McLaurin and several others farmed in a small way at the head of the lake. McLaurin (also spelled McLaughlin, McLaren, or McGauvin) was among the first traders at a post near the head of Flathead Lake. Ashley succeeded McLaughlin as trader, under the supervision of Angus McDonald of Fort Connah. In the late 1860s several of the families living at Ashley Creek left the area because of Blackfeet raiding, some only temporarily. Ashley stayed on, later moving to the foot of Flathead Lake and then selling out in the 1880s and leaving the area (Shea 1977:39-40; McCurdy 1976:71-72; Johns 1943 1:35).

There are reports of a few Euroamericans coming through the Flathead Valley in the 1860s besides those who settled at the head of the lake and those heading to the mines in southeastern British Columbia. Some traveled into Montana from the north. Carpenter Esna D. Dashiell arrived at Flathead Lake in August of 1864. Frank Normandie came to Montana from the Fraser River in Canada and continued on to the Deer Lodge Valley via Flathead Lake in 1862 (Johns 1943 IX: 149).

1871-1891

Until the Great Northern Railway entered the Flathead Valley in 1891, development of the area was slow and uncertain. Supplies came to the Flathead by pack train from Walla Walla, The Dalles, or the Missoula area. The first post office was established at Scribner (or Flat Head Lake), near Flathead Lake, in 1872, but it was only open until 1875 (Robbin 1985:15, 65).

In the 1870s several Euroamericans visited the upper Flathead Valley, some remaining a considerable time. In the winter of 1871-72 a number of men from the Missoula area, including Harry Burney, A. B. Hammond, and others wintered on the meadow subsequently filed on by Burney. Although most of them left the following spring, Burney stayed and raised cattle and horses. He was the only Euroamerican man living on the east side of the Flathead River until 1883, when several families located on that side. Burney was originally from Ireland and had participated in gold rushes in California and then in British Columbia. He recalled that a number of Flathead settlers left in the late 1870s when it was reported that Sioux leader Sitting Bull was returning from Canada via the Flathead (Lang 1923:1-3; Isch 1950:19; Johns 1943:III, 35; Ingalls ca. 1945:1).

In the late 1870s a few men entered the upper Flathead in order to push the cattle range north of the reservation. These included former placer miners Nick Moon and Thomas Lynch. Moon later became the first in the valley to raise vegetables and to use irrigation for farming (see Figure 10). The lack of transportation continued to be a problem, however, and according to the 1880 population census there were only 27 Euroamericans living at the head of Flathead Lake. All were livestock men except for one woman, two girls, and a blacksmith (Isch 1950: 19; O'Neil 1990:12; Ingalls ca. 1945:1-2; Biggar 1950:86-87; Johns 1943:VI, 66).

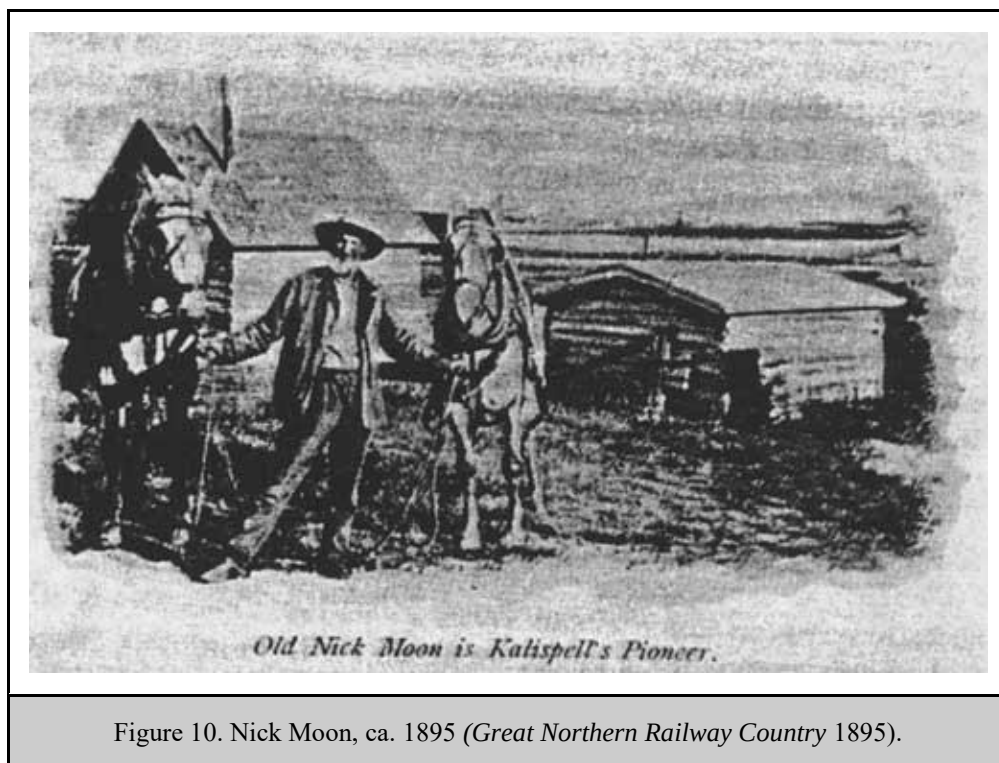


Figure 10. Nick Moon, ca. 1895 (*Great Northern Railway Country* 1895).

The next limited wave of settlement began in 1880, when John Dooley came to the Flathead. In 1881 he opened a small trading post called Selish on the Flathead River. For a number of years the Selish post office served people from Marias Pass on the east to the Idaho boundary on the west and the Canadian line on the north. In 1884 the post office at Ashley was established (the town of Ashley was later absorbed by the newer town of Kalispell). Mail was carried on horseback from the south along the west side of Flathead Lake. Daily mail for the upper Flathead was not established until steamboating on Flathead Lake became regular (see Figures 11 and 12) (Isch 1950:20; Johns 1943:IX, 14-15; Elwood 1980:7).

Town	Dates of Post Office	First Postmaster	Comments
Apgar	1913-30, 1942-44	Jessie Apgar	
Ashley	1884-91	Andrew Swaney	
Big Arm	1911-	Marion F. Lamb	
Bigfork	1901-	Everit Sliter	
Blodgett	1903-04	Daniel Whitaker	
Bowman Lake	1924-26	Fred Gignilliat	associated with Skyland Boys Camp
Cabinet	1901-05	Angus Hutton	
Columbia Falls	1891-	James Kennedy	formerly known as Monaco
Condon	1952-	Russell Conkling	
Creston	1894-1956	Charles Buck	
Dayton	1893-	Clarence Proctor	
Demersville	1889-1892, 1893-1898	John Clifford	formerly Clifford
Echo	1901-05	William Kelsey	
Essex	1898-	William Glazier	railroad station named Walton
Fielding	1909-14, 1915-19	Joseph Cremans	
Flat Head Lake	1872-1875	valentine Coombes	originally Scribner
Garry	1923	James Beardsley	
Glen	1890-1903, 1910-14	William Bohannon	
Harrisburg	1903-05	Claude Bradley	replaced by Fortine post office
Holt	1890-1908, 1912-15	Euegene Soars	
Jessup	1909-18	Herbert Jessup	
Kalispell	1891-	Charles Harrigan	
Kila	1901-	Harry Neffner	
Kintla	1916-25	Mary Schoenberger	

Lake McDonald	1905-55, 1946-66	George Snyder	head of Lake McDonald
Lakeside	1948-	John Stover	formerly Chautauqua
LaSalle	1900-05	Walter Jellison	
Leona	1896-1899	Frank Strycker	
Lupfer	1917, 1924-25, 1930-34	Hubert Herman	
Marion	1892-1894, 1904-06, 1930-34	Charles Mitchell	also called Swan
Marston	1895-1907	Cyrus Marston	
Martin City	1947-	Clara Frederick	
Mock	1921-39	Peter B. Wigger	
Montford	1900-10	Arthur Lindsey	
Murray	1900	Isaac Murray	
Nyack	1912-42	George Robertson	railroad station called Red Eagle
Olney	1907-08, 1914-17, 1918-	Elizabeth Dickerhoof	
Paola	1914-19, 1920-28	Marie Cameron	
Pleasant Valley	1892-1895, 1901-05	George Allen	formerly Richland and Meadow
Polebridge	1920-	Benjamin Hansen	
Polson	1898-	Henry Therriault	
Proctor	1910-	Clarence Proctor	
Rollins	1904-	Rehenault Rollins	
Selish	1881-1891	John Dooley	
Sheldon	1887-1903	Sarah Sheldon	
Somers	1901-	John Sawyer	
Trail Creek	1921-54	Benjamin Price	
Trego	1911-19	Charles Miller	
West Glacier	1900-	Edward Dow	formerly Belton
Whitefish	1903-	John Skyles	

Figure 11. Post offices in the Flathead Valley area. Towns in bold type still have post offices; the rest do not (Cheney 1983: *passim*).

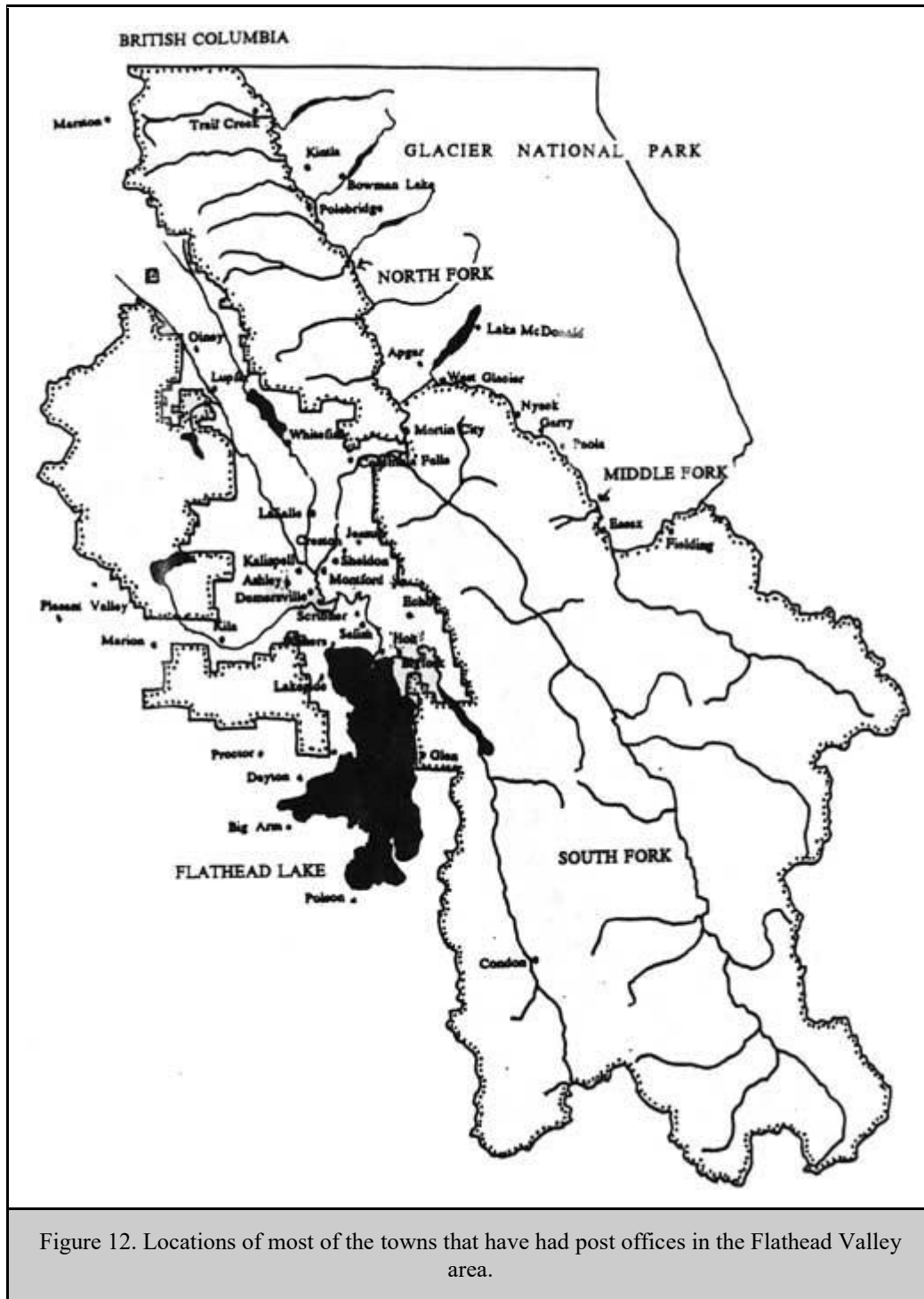


Figure 12. Locations of most of the towns that have had post offices in the Flathead Valley area.

Although some settlers were moving in, the relatively few residents of the Flathead in the early 1880s were mostly quartz miners from Butte and other areas, a few trappers, some buffalo hunters, and a number of French Canadians. According to Frank Linderman, "Without the least knowlege of farming these men, many of them confirmed bachelors, took up claims and became farmers as though they had reached the realization of a lifelong dream." Many family men found it necessary to leave their wives and children behind in the Flathead to prove up on their 160-

acre homestead claims while the men worked in the mines in Butte, lumber mills, and so on. Others would live on their claims for the shortest time required and then make cash entry proof and return to their jobs (Linderman 1968:45; Mauritsen 1954; Duncan ca. 1923:5).

The early stockmen tried to discourage farming in the upper Flathead, telling newcomers tales of early frosts, low rainfall, and vicious mosquitos. Until the late 1880s, in fact, very few agricultural products were raised in the area; most were brought in from Missoula. Since the early market for produce was local only, many farmers also spent much of their time logging (Mauritsen 1954; Elwood 1980:6).

In the 1880s the Flathead Valley was largely wooded. Scattered through the dense forest were natural prairies, occasional groves of ponderosa pine, and small lakes. The first area settled was the high ground to the north and northwest of Kalispell because it was dry and not heavily timbered; some of the areas that are now good farmland, such as the Creston area, were too wet and swampy to till in the early years (Murphy 1983:142).

After the Northern Pacific Railroad reached Missoula in 1883, more and more people began coming to the upper Flathead Valley, some of them railroad construction workers looking for a place to settle. By 1890 the upper Flathead Valley reportedly had 3,000 occupants. Walkup and Swaney established a trading post on Ashley Creek along the Fort Steele-Kalispell Trail in 1883. At that time, the round trip from the post to Missoula took about three weeks. In the early years of settlement of the Flathead Valley, various bands of Native Americans camped in the valley tanning hides and selling moccasins and other products to settlers. According to a woman who lived in the Flathead in 1883, "except for the nomadic Indians, life for the most part, centered around the trading posts, a few ranches, and an occasional trapper's cabin" (Isch 1950:20-21; Patterson n.d.: Ch. 15, p. 2; Beck 1981).

Relations between the Native Americans and the incoming settlers were generally peaceful in the Flathead Valley. Two Kootenai were lynched in Demersville in 1887, however, and three prospectors were killed on Wolf Creek by Native Americans that same year. African-American soldiers from Fort Missoula were sent to the Flathead in 1890 as peacekeepers for several months, but they were not really needed and spent most of their time clearing trails and roads (Isch 1948:72; Elwood 1980:10-11).

In 1885, when the first school census was taken in the area, only 95 children lived west of the Flathead River, north of the Flathead Indian Reservation, and south of the Canadian boundary. Three years later, according to Flathead Valley old-timer George Stannard, there were about 100 families living on valley ranches (Johns 1943:III, 115; Vaught Papers 1/IJ).

T. J. Demers founded the town of Demersville in 1887, located at the head of navigation on the Flathead River. For a few years, until the rise of Kalispell in the early 1890s, Demersville was the largest town in the upper Flathead. The first newspaper in northwestern Montana, the *Inter Lake*, began publishing there in 1889. Settlers flowed in and out of Demersville, most of them trying to reap profits from the Flathead's abundant resources or from each other (McKay 1993).

Montana Territory, established in 1864, became a state in 1889, primarily because of concern over the lack of local political control. By this time, settlement of the upper Flathead had begun in earnest. A few early settlers of the upper Flathead Valley even decided that settlement was getting "too thick." For example, George Hall, a prospector, hunter and trapper, left the Flathead in 1889 to move to Alaska (Vaught Papers 1/K).

Flathead County was created out of Missoula County in 1893 because of the long distance to Missoula. The county originally had about 8,500 square miles, but subsequent additions and losses (due to the formation of other counties) reduced its size substantially (see Figure 13). Kalispell became the county seat in 1894.

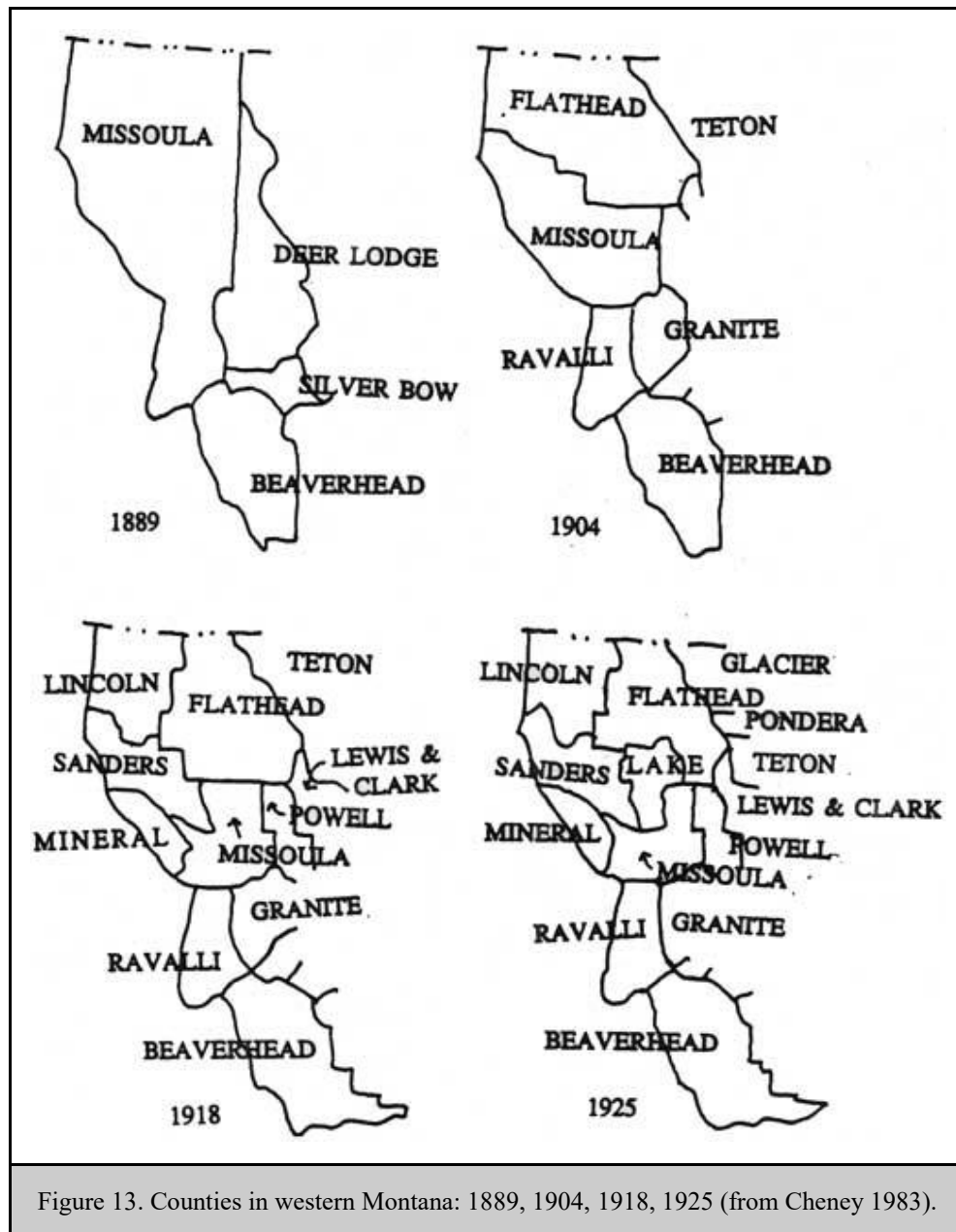


Figure 13. Counties in western Montana: 1889, 1904, 1918, 1925 (from Cheney 1983).

1891 to World War II

When the Great Northern Railway was deciding where to lay its route through the valley, Demersville boasted of its navigable waters, Ashley that it was at the valley's natural outlet to the west, and Columbia Falls that it was where the tracks had to emerge from Bad Rock Canyon (Elwood 1980:30). But the GNR chose none of these existing towns as its headquarters; instead, the new town of Kalispell became the division point.

When the railroad was known to be coming through the Flathead, old prospectors and ranchers came in to homestead the land. They were speculators on a small scale; they obtained title until other settlers came to purchase their land. Soon after the railroad arrived, experienced farmers followed ("Kalispell and the Famous Flathead" 1894:6). For several decades the GNR operated an extensive advertising campaign to attract settlement to towns along its railroad line, including towns and agricultural areas in western Montana.

Several existing towns in the Flathead were founded directly because of the railroad coming through the valley. One of these was Columbia Falls, which was platted by a group of Butte business men as a speculative venture. Kalispell was established in 1891, soon replacing Demersville four miles to the southeast, to serve as the division point for the railroad (see Figure 14). In 1904 the main line of the Great Northern was moved to the north end of the valley, and the town of Whitefish was platted and carved out of the woods to serve as the new division point (the previous settlement in the area had been located at the foot of Whitefish Lake). Whitefish grew rapidly, and by spring of 1905 it boasted 950 residents, many of them railroad workers (Macomber 1976:3; Schafer 1973:2, 6, 27). The town of Essex (formerly called Walton) was established as a railroad town, and it too housed many railroad workers (the helper engines that bring trains over Marias Pass have always been based out of Essex).



Figure 14. Street scene in Kalispell, ca. 1895 (*Great Northern Railway Country* 1895).

The Japanese who worked for the railroad were hired and cared for by an employment agency called the Oriental Trading Company, which opened a Kalispell branch in 1899. Two years later the company had about 750 men working on the Kalispell division (McKay 1993:18).

The NPRR hired 15,000 Chinese to help construct its line through Washington, Idaho, and Montana in the early 1880s, but very few if any Chinese appear to have worked on the GNRR. Instead, Chinese in the Flathead Valley provided a variety of goods and services, owning or working in laundries, restaurants, and stores and working as servants, cooks, and gardeners. In the mid-1880s an anti-Chinese movement throughout the West caused many to flee to urban centers. The first Chinese Exclusion Act was passed in 1882, prohibiting Chinese labor immigration. A 1902 act banned all Chinese from entering the United States for temporary settlement purposes. In 1895 Kalispell labor organizations launched a boycott against businesses employing or buying from Chinese. Both Chinese men and opium (after it became illegal) were smuggled across the border from Canada at Gateway and along the North Fork of the Flathead in the 1890s and following years. The Chinese community in Kalispell, as elsewhere, eventually disappeared because of laws prohibiting immigration and because the group was overwhelmingly male (McKay 1993:20-21; Elwood 1980:61).

Between 1910 and 1934 more than 61,000 acres of the Flathead Indian Reservation passed out of Native American ownership. Some Euroamericans bought summer home sites on Flathead Lake, but more commonly they registered for land in 1909 and selected homesteads when the Reservation was opened for settlement (Bergman 1962:85-89; Biggar 1950:131, 134, 137-138).

The first cash crops grown in the upper Flathead were oats (largely for home feed), wheat, and potatoes. The financial panic of 1893 led to very low agricultural prices for a time, but soon prices and demand rose. There was such a demand for labor that a delegate was sent East to induce laborers to come to the Flathead, and reportedly several thousand did come to the Flathead to live and work. In 1897 a number left for the Klondike gold rush, but that same gold rush created a demand for food and other products that aided the Flathead. Similarly, the Spanish-American War of 1898 slowed the general economy some, but the war demand for horses and supplies helped the local economy (Mauritson 1954).

In the early 1900s in the Flathead, farmers were raising spring and winter wheat, oats, rye, timothy hay, clovers, vegetables, dairy cattle, and various fruits. The population of the Flathead boomed in the 1910s because of high agricultural prices and high yields. The agricultural drought started in the spring of 1917, and 1918 was "unrelievedly grim" in Montana. The Flathead was not seriously affected by the drought until 1919, however (Read 1904:49-50; Toole 1972:71-72).

Apple orchards and other fruits were being raised along Flathead Lake by the 1890s. The first commercial cherry orchard on the east shore of Flathead Lake was planted in 1930, and a cherry growers' cooperative was organized in 1935 (the year of a freeze that killed many trees) (Robbin 1985:, 73-74, 77).

In the 1930s farm families from drought-stricken eastern Montana moved to the Flathead, but many of these settled on unsuitable land. By the spring of 1939 there were 1,150 farm families in

Flathead County who were classified as migratory or stranded, living on submarginal or cut over lands and unable to earn a living. Flathead County had far more destitute farmers at that time than any other county in Montana. After peaking in 1938, the county's population declined in the early 1940s. Flathead County furnished more men per capita to the armed services in World War II than any other county in the United States (Sundborg 1945:11).

Tractors were first used in the Flathead in 1905, but they were not widely employed until World War I and later. The mechanization of logging in the 1930s led to the end of the market for horses and horse feed. Extension work started in the county in 1914, and the Northwestern Montana Branch Experiment station was established in Creston in 1946 (Mauritson 1954).

In 1940, less than 3% of the agricultural land in the county was irrigated. In 1945, the principal crops of Flathead County farms were field crops, livestock, and dairy products (Sundborg 1945:39, 48). Peppermint oil, now an important Flathead agricultural crop, had not yet been tried in the Flathead Valley.

The more inaccessible valleys of the Flathead were not settled as early as the main valley. The Middle Fork, for example, had only a few squatters in 1899, but in 1923 a school was built in Nyack to accommodate settlers' children. Essex had a number of residents early on because of the railroad work there, but the other railroad stations were section houses only. Coram (also known as Citadel) was not founded until 1905, when it was established as a logging town. By the late 1890s there were a few prospectors' cabins in the South Fork (one, belonging to "Batti," was probably that of Baptiste Joyal) (Sztaray 1994:14; Ayres "Lewis & Clarke" 1900:55, 68; newspaper article in FNF CR).

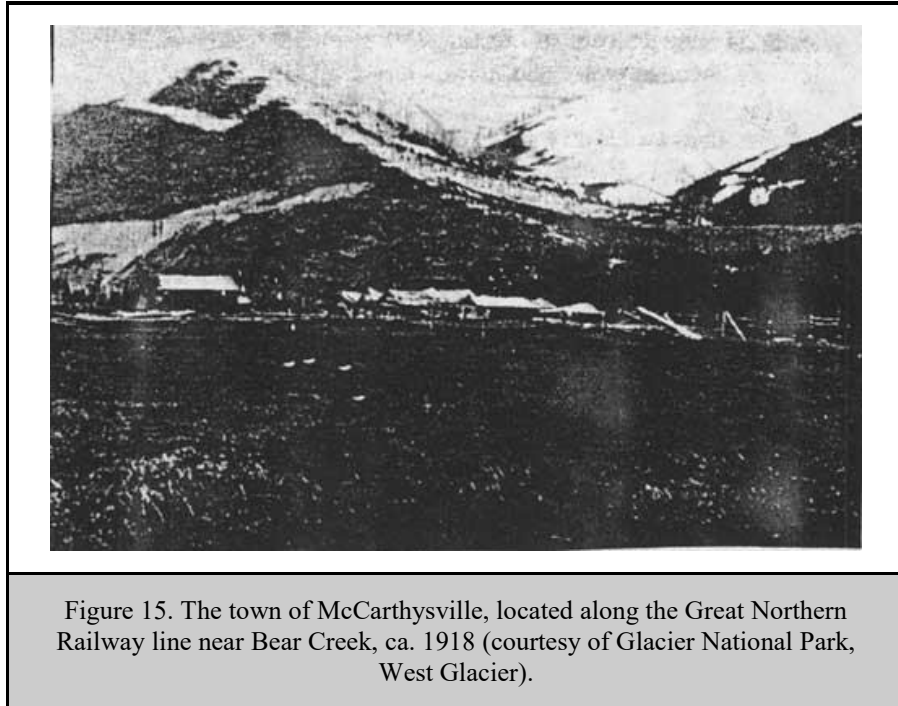
Bigfork was platted in the early 1900s by Everit Sliter, who had a large orchard there. The hydroelectric plant in Bigfork was built in 1901 to serve the valley. In the early 1900s there was great excitement about a pulp mill that was believed to be coming to Bigfork but never materialized. Near Bigfork was a ferry on the Flathead River, Holt Ferry, that was not replaced by a bridge until 1942 (Robbin 1985:59; Elwood 1980:198; Flint 1957:7).

Kila was originally a station stop on the Great Northern known as Sedan. The town was platted in 1914 and was named for William Kiley, a partner in the Enterprise Lumber Company mill located there (Elwood 1980:209).

The upper Swan Lake area was first settled in the early 1890s by people living around Goat and Lion Creeks. In 1899 there were only about 10 houses (all unoccupied) between the head of Swan Lake and Holland ranch at the mouth of Holland Creek. Ben Holland sold his ranch to the Gordons in 1905 (he had earlier named Gordon Pass for his friend Dr. Gordon). There was also a trapper's cabin at the foot of Elbow (Lindbergh) Lake at that time (Flint 1957:30; Ayres 1900 "Lewis & Clarke":55; Wolff 1980:53).

One of the most colorful, if short-lived, towns in the area was McCarthysville, located on a tract of level ground between Summit (Marias Pass) and Essex (see Figure 15). The town was founded by a timber cruiser, Eugene McCarthy, while he was inventorying the timber resources along the proposed railroad right-of-way through the area in 1890. The town was located on one

side of Bear Creek and the railroad construction camp on the other side (the latter housed up to 4,000 workers). The resident population of McCarthysville peaked at about 1,000 people, and during this period one passer-through labeled it a "seething Sodom of Wickedness." The construction camp was moved when the railroad reached the Flathead Valley in 1891, and the headquarters was relocated to Kalispell. Most of McCarthysville was destroyed by fire in 1921 (Murphy 1993; Hidy 1988:81; Atkinson 1985:16).



World War II to Present

The establishment of new communities in the Flathead Valley after World War II was directly linked to the building of the Hungry Horse Dam, completed in 1953. The towns of Martin City and Hungry Horse were created because of the dam project, and all the settlements in and near the Canyon grew (and declined) accordingly. Columbia Falls' population continued to grow in the 1950s due to the construction and opening of the Anaconda Aluminum Company plant.

Populations of Selected Towns, 1940-1960

	1940	1950	1960
Coram	200	500	300
Martin City	0	1,000	300
Hungry Horse	0	1,335	300
Columbia Falls	637	1,232	2,500
Kalispell	8,245	9,737	10,151

(FNF "Timber Management, Coram" 1961:42)

The construction of the Hungry Horse Dam between 1948 and 1952 gave work to as many as 2,550 men. Legislation offering industries located within 15 miles of the dam a lower electricity rate was a key factor in the ACM decision to build the aluminum plant in Columbia Falls. The first production of aluminum at the plant was in 1955, when it employed over 600 men. Following a period of unusually high economic activity in the valley because of Hungry Horse Dam, the construction and operation of the aluminum plant maintained or increased the activity in the valley (M. C. Johnson 1960:2-3; Ruder 1967:2).

FOREST RESERVES

Introduction

Public land policy in the United States can be divided into three periods: disposition (converting the land to private ownership and thus removing it from the public domain), reservation, and management. The disposition period lasted from approximately 1776 until 1891, when the Forest Reserve Act was passed. The public land was then reserved (withheld) until 1905, when the Forest Service took over the management of the forest reserves. From then until the present, national forest lands have been actively managed (Dana 1980:10).

The two forest reserves, portions of which later became the Flathead National Forest, were the Flathead Forest Reserve and the Lewis & Clarke Forest Reserve. They were created in 1897 amidst much local protest. Forest rangers under the General Land Office worked in challenging conditions with little instructions and low financial rewards. Many of these rangers were men who already lived in the area and possessed the required skills needed for the varied outdoors work.

Forested Land on the Public Domain up to 1891

In the 1870s scientists were proclaiming dire warnings about a coming "timber famine" in America. The growing fear that the nation's white pine supply was being depleted raised public awareness of the dangers of passing public lands into private ownership as quickly as possible, which had been federal policy up to that time (Gates 1968:563).

Support for forest conservation arose in the late 1800s in response to the destruction of timber by fire and the wasteful timber harvesting practices of the day, combined with the growing belief that forests were important for the protection of watersheds and prevention of floods. Groups that supported the creation of forest reserves included preservationists seeking parks, sportsmen seeking game habitat protection, western farmers and urban dwellers seeking watershed protection, and professional foresters in the Department of Agriculture concerned about forest depletion from fire, insects, disease, and non-sustained-yield forestry practices (T. West 1992:3, 29). The views of Native Americans on the creation of forest reserves in northwestern Montana have not been identified, but their rights to use and occupy the land being considered for forest reserves were not discussed in the debates.

In 1875 the American Forestry Association was organized as a citizens' group to promote "forest conservation" and timber culture. The association supported the drive to obtain congressional authority to reserve as public forests those government-owned timberlands in the West that had not already passed into private ownership. The first technical forester in America was Dr. Bernhard E. Fernow, a Prussian who came to the United States in 1876. He served as chief of the Division of Forestry in the U. S. Department of Agriculture from 1886-1898. Fernow stressed principles of sustained-yield management that he had learned in Europe. Professional forestry education in the United States began with the opening of the College of Forestry at Cornell in

1898 and at Yale in 1900 (Winters 1950:2, 3, 7; Clepper 1971:21; Dana 1980:52-53). Until then, all professional foresters had been educated abroad.

Congress had forbidden the removal of timber from the public domain as early as 1831. By 1854 the GLO was given the responsibility of protecting the public domain but little funding to do so. Westerners who were determined to "tame the wilderness" considered the regulations unreasonable and foisted upon them by outsiders. In the 1800s many lumbermen bent and broke the timber trespass laws. Often they genuinely believed they were acting in the public interest, based on the prevalent doctrine of progress: they were, after all, turning resources into capital, opening new areas, and helping to found new communities (Steen 1976:6-7; Cox 1985:142).

The Timber and Stone Act of 1878 represented an attempt by the government to control wholesale timber cutting and quarrying on public lands while at the same time allowing people with particular needs, such as miners, access to timber. Each claimant could obtain up to 160 acres for \$2.50 an acre. The land had to be unfit for cultivation and valuable chiefly for timber or stone. Miners, ranchers, and farmers could cut timber for improvements on their land but were not supposed to export or sell it. Before this act there had been no legal way for anyone to harvest timber. The act soon led to fraud, however. Corporations and wealthy individuals obtained timber fraudulently for large-scale logging operations or held land for speculation; some even hired gangs of men to make entries on behalf of others. It proved to be almost impossible to protect the public timber supply by this act because the few investigating agents faced hostile westerners, including the local press, politicians, and juries. In 1892 the act was amended to include Montana. Because of this act, 663,552 acres of Montana forest land passed into private ownership (mostly large lumber companies) (Dunham 1970:61; Hudson et al. ca. 1981:216; Gates 1968:550-551, 561; Toole 1968:357).

By 1891 the pineries of the upper midwestern states had largely disappeared, future exhaustion of the timber supply of the south was becoming apparent, and vast areas of land along the Pacific coast had been transferred to private individuals and corporations. At that time, according to forester (and later Forest Service Chief) Gifford Pinchot, the stealing of government resources was "a common and perfectly normal occupation, freely and openly pursued by the most respectable members of the community... The job was not to stop the ax, but to regulate its use" (Kinney 1917:244; Pinchot 1947:24, 29).

Creation of the Forest Reserves

The 1891 Forest Reserve Act authorized the President to establish forest reserves as part of a broader effort to revise the public land laws. President Harris created the first forest reserve, the Yellowstone, that year. The act had as its first purpose the protection of watersheds; it was only secondarily concerned with the maintenance of a permanent supply of timber (Pyne 1982:185). The 1891 legislation lacked provisions for the administration or protection of the forests from trespass and fire. Under the act, no timber could be cut, no forage grazed, no minerals mined, and no roads built in the forest reserves. The closing of the reserves to entry or utilization infuriated western stockmen, settlers, miners, and lumbermen.

As Gifford Pinchot stated in 1907, the forest reserves were created because forests of the West were being destroyed by fire and reckless cutting. The setting aside of the land was intended to "save the timber for the use of the people, and to hold the mountain forests as great sponges to give out steady flows of water for use in the fertile valleys below." Much of the early support for setting aside forest reserves came from western irrigators. Watershed protection would help them because forests absorbed rainfall, retarded stream run-off, increased ground-water levels, slowed snow melt, and lessened soil erosion (Pinchot 1907:7; Hays 1959:22-23).

When the forest reserves were first created, the boundaries were delineated without much on the-ground information, so agricultural land frequently was included and timbered land excluded. After 1900 money and manpower became available for field examinations, and many boundaries, including those in northwestern Montana, were subsequently adjusted (Pinchot 1907:8).

Since the 1870s it had been proposed to reserve lands at the headwaters of the Missouri and Columbia Rivers in order to control the quality and rate of flow of these rivers. In September of 1891, an *Inter Lake* article mentioned that the American Forestry Association had proposed a 6,106-square-mile forest reserve in the northern Rockies. General Land Office (GLO) special agent A. F. Leach examined the lands involved. The proposed boundary ran from midway between the 112th and 113th degrees of longitude in Choteau County, from there south to the head of Elk Creek in Lewis and Clark county, then northwest to the head of Flathead Lake, then directly north to the boundary line and back east to the starting point. The surveyor general of Montana, George Eaton, opposed the setting aside of this reserve, and the State Board of Land Commissioners also protested the request (Huffman 1977:253; *Inter Lake*, 27 September, 19 October, and 4 December 1891).

A. F. Leach himself commented to a reporter that "he has as yet to find a single man who is in sympathy with the scheme, and that every man with whom he has conversed is bitterly opposed to any such reserve," particularly because it would injure miners and prospectors (*Inter Lake*, 4 December 1891). The Surveyor General of Montana submitted a stronger comment in November of 1891:

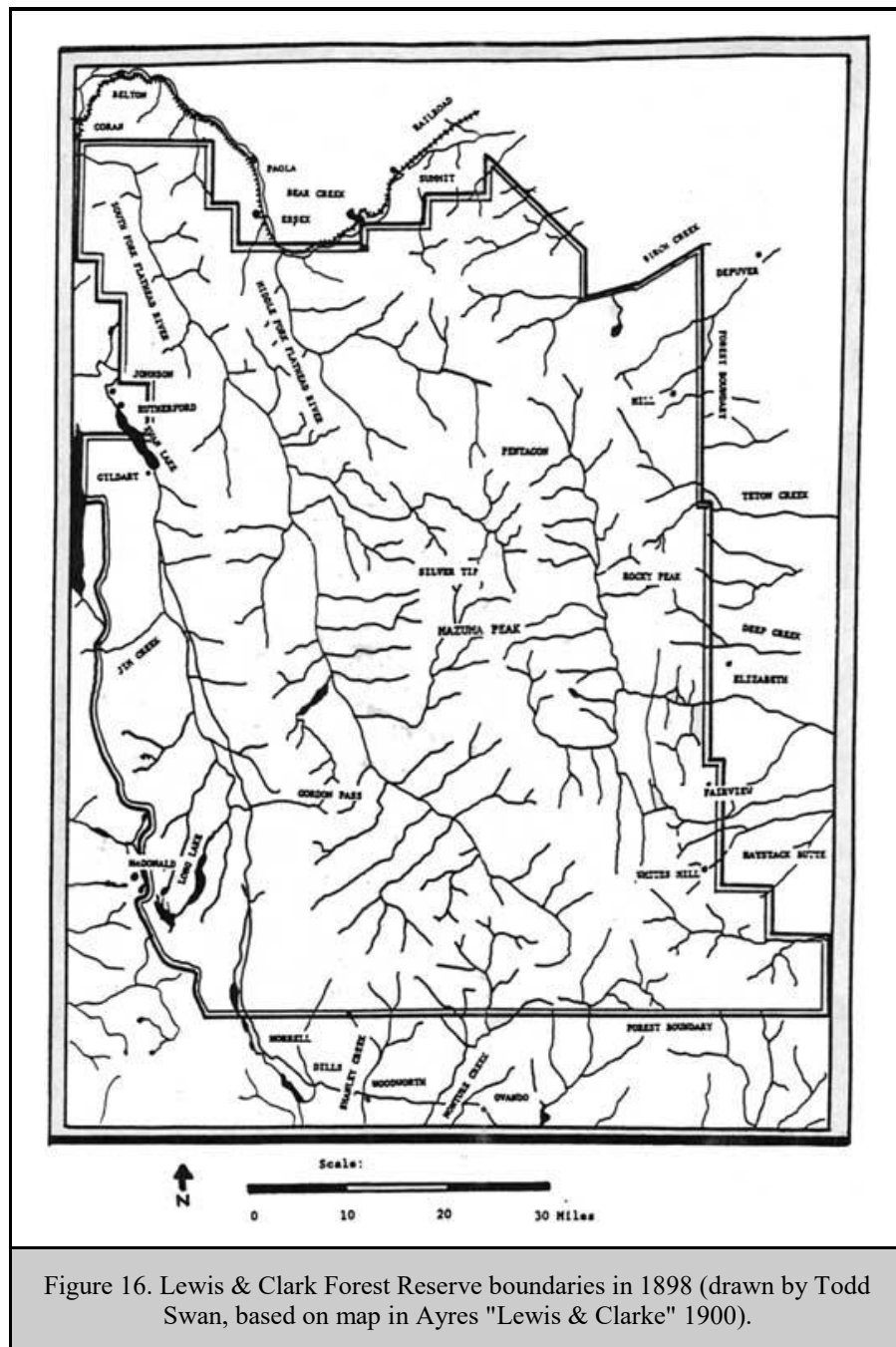
As for the contingently suggested idea of extending this Reservation westerly to the Kootenai river, with the consequent annihilation of all prospects of material advancement of Northern Missoula county, I can only say that I regard such suggestions as emanating from the brain of a mad man" ("Montanans Oppose It!", *Inter Lake* 27 November 1891).

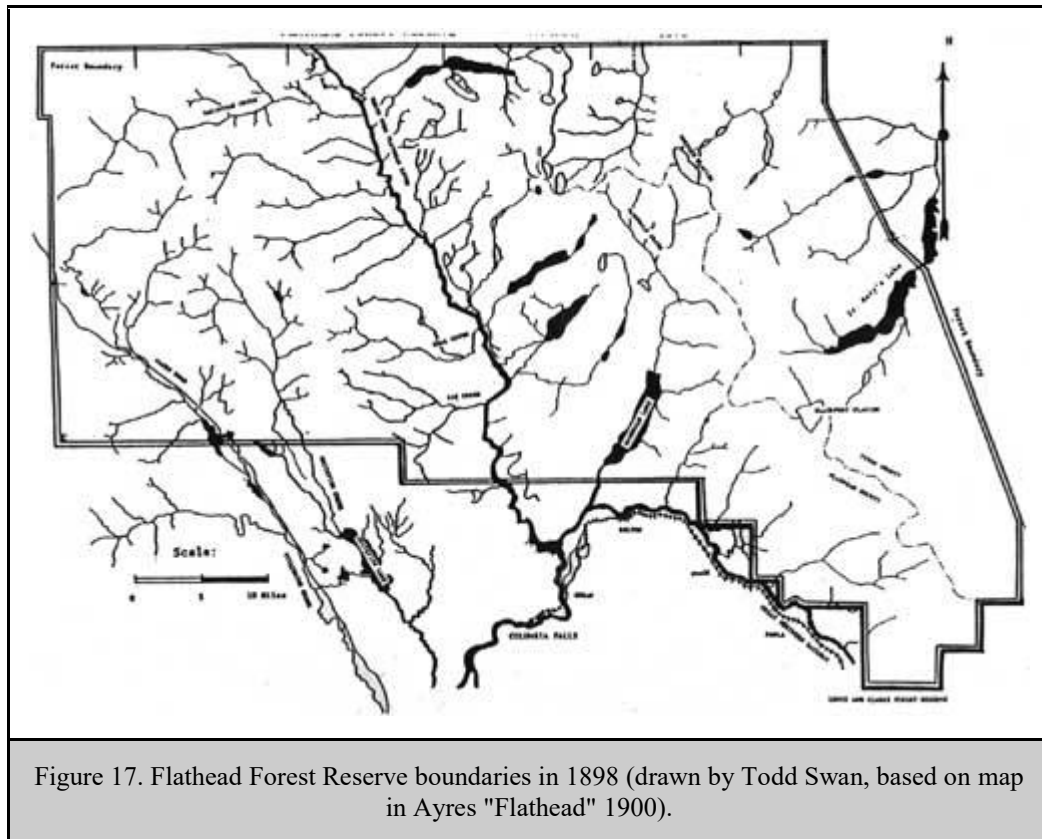
Plans for a forest reserve in the northern Rockies were temporarily shelved.

On February 22, 1897, just days before he left office, President Cleveland established 13 new forest reserves in the west, including the first four in Region One: Flathead, Lewis & Clarke, Bitterroot, and Priest River. The creation of these 21 million acres of "Washington's Birthday reserves" was based on the recommendations of the Forest Commission. (In 1896 the National Academy of Sciences had appointed a National Forest Commission, which included Gifford Pinchot as a member, to present a plan for forest management.) The Commission also recommended creating an administrative agency to oversee the reserves, to create fire prevention

programs, and to regulate grazing, mining, and timber harvesting (Huffman 1977:262; Steen 1976:31; Robinson 1975:7).

When established, the Lewis & Clarke Forest Reserve covered 2,926,000 acres (see Figure 16). The Flathead Forest Reserve included 1,382,400 acres (see Figure 17) (Ayres "Lewis & Clarke" 1900:36; Pinchot 1947:108). Portions of the Flathead and the Lewis & Clarke Forest Reserves created in 1897 are now much of the land managed by the Flathead National Forest.





The Flathead Forest Reserve included the land that is now Glacier National Park until the Park was created in 1910.

The Forest Reserve Act of 1897 (also called the Organic Act) directed the Secretary of the Interior to protect the forest reserves against fire and depredations (timber trespasses, for example) and authorized him to make regulations for the administration of the reserves. This act represented a compromise between western interests and conservationists. It suspended the actual withdrawal of the "Washington's Birthday reserves" until March 1, 1898. The Pettigrew Amendment, approved by the President in June 1897, allowed the exclusion of agricultural or mineral lands located within the reserves, permitted free timber and stone to settlers, authorized the sale of mature or dead timber at or above appraised value, and retained the clause for lieu land. By the latter provision the government lost millions of acres of its best lands as railroads, private concerns, and individuals exchanged their worthless land within the forest reserves for valuable land elsewhere. Individuals and corporations abused this act freely, even relinquishing land that they had already cut over in exchange for forested acreage (Clepper 1971:27; Robinson 1975:7; Kerlee 1962: 14-15; Steen 1976:35-36; Ise 1920:141-142, 176).

The 1897 Forest Reserve Act, or the Pettigrew Amendment, formed the basis of federal forest reserve management until it was supplemented in 1960 by the Multiple Use-Sustained Yield Act. The 1897 act defined the purposes of the forest reserves as follows: to "preserve and protect the forest within the reservation... for the purpose of securing favorable conditions of water flows... [and] to furnish a continuous supply of timber for the use and necessities of the people of the United States." This reflected a compromise between preservation (non-use) and conservation

(use), and a number of the amendments listed above greatly reduced the local antagonism towards forest reserves. The GLO administered the reserves in a custodial manner through the regulation of use and occupancy (Dana 1980:62; Steen 1976:36).

One of the proponents of a forest reserve in the Flathead area was well-known preservationist John Muir. He accompanied Gifford Pinchot on his trip to the Flathead Valley area for the National Forest Commission in the late 1890s (Steen 1976:49). In 1898, shortly after the creation of the forest reserve, Muir wrote:

if you are business-tangled, and so burdened with duty that only weeks can be got out of the heavy-laden year, then go to the Flathead Reserve; for it is easily and quickly reached by the Great Northern Railway. Get off the track at Belton Station [West Glacier], and in a few minutes you will find yourself in the midst of what you are sure to say is the best care killing scenery on the continent...Give a month at least to this precious reserve... [it] will lengthen your life (Muir 1898:22-23).

Gifford Pinchot himself remembered the area as the place where he first learned how to throw the diamond hitch (a method of tying down loads on pack animals) and where he successfully hunted deer, bear, elk, goat, and mountain sheep. "This region holds some of the pleasantest memories of my life," he later maintained ("Memorial Dedicated" 1931:214-218). Commenting on an 1896 trip he and Jack Monroe and his bear dogs took up the Swan Valley, from which trip the Lewis & Clarke Forest Reserve was created, Pinchot wrote:

To me it was a fairy land, in spite of the mosquitoes, which were so bad that I wore gloves, a flour sack across my shoulders, and a handkerchief over my ears and neck. The only chance we had to sleep was when the cold of the short July nights moderated their zeal. But the country more than made up for everything....It was a gorgeous trip - the best I ever made on foot (Pinchot 1947:98-99).

Soon after the Montana forest reserves were created in 1897, the state legislature passed a resolution requesting that the order be rescinded, declaring that the forest reserves "would seriously cripple and retard [Montana's] development." President Cleveland had established the reserves in 1897 without any notice to those affected. Many western congressmen became "permanent enemies of the reserves." Many county governments were also resistant to the reserves because they reduced future tax income (Schutza 1975:59; Kerlee 1962:14, 27). In 1897 Montana forestry professor George Ahern made the revealing comment that "Two companies dominate the state, and all opposition to the reserves is inspired by these companies...The milling companies know that their logging methods will receive some supervision, and they do not want any supervision" (*Helena Independent*, 3 May 1897, SC 1533, MHS).

In the late 1890s Ahern showed slides on the effects of deforestation throughout the state. He served as a local enthusiast for national forest reserve policy (Rakestraw 1959:40, 43). A few weeks after the Montana forest reserves were created in 1897, Ahern wrote a letter promoting this act and stated that "it would be wiser to give the timber away than to let this indiscriminate slaughter continue." He had outlined the Lewis & Clarke forest reserve three years earlier, mapping "a reserve that did away with every reasonable objection. No agricultural land was

included; no mines (one exception); the timber land is not an immediate necessity; there are no settlers to be disturbed" (*Helena Independent*, 19 & 23 March 1897, SC 1533, MHS).

Another published supporter of the Montana forest reserves was Mrs. T. J. Walsh, although she was somewhat misinformed as to their purposes. In 1901 she wrote the following about her visit to Lake McDonald in the Flathead Forest Reserve:

It is a matter of sincere congratulation that this whole region...is included within the Flathead Forest Reserve, ensuring to this and future generations its preservation in native beauty and sublimity...the correlative duty devolves upon [the government] of constructing roads and trails to the many points of interest for the tourist and scientists, that are hidden in these solitudes. They could be constructed and maintained under the supervision of the forest rangers, at trifling cost" (Walsh 1901:330).

Before President Theodore Roosevelt left office in 1907, he had tripled the total area of forest reserves in the country. In 1907 the authority of the president to create new forest reserves in Montana and other states was revoked, not to be reinstated for Montana until 1939 (R. Robbins 1976:349; G. Robinson 1975:9).

GLO Administration of the Forest Reserves, 1898-1905

The GLO administered the forest reserves from 1897 until 1905, when the Forest Service was created. The GLO was staffed not with foresters but with politically oriented men who were influenced by lumbermen, timber speculators, railroad men, and stockmen. In 1897 the forest reserves in the country totalled only a little over 30 million acres (by 1905 the acreage had increased to almost 86 million). The reserved land was mostly mountainous areas in the Pacific Coast states and in the central and northern Rockies. The most prevalent use at that time was grazing, not timber harvest (Gates 1968:571, 573; Clary 1986:3).

Forest supervisors did not receive much financial reward for their labors. In these early years, they were paid \$1,000 per year and had to furnish their own horses, subsistence, and camp equipment out of that amount. They apparently worked seasonally. On April 2, 1901, Lewis & Clarke Forest Reserve supervisor Gust Moser wrote to his superior, J. B. Collins, "Have you heard anything about season's work - I am getting rather discouraged - With the most rigid economy I find myself going in debt each month from \$25 to \$35 and it will take about all summer on a Supervisor salary to get even with the world." In 1906, supervisor Page S. Bunker also reported that he was unable to pay his expenses out of his salary even "with utmost economy" (Shaw 1967:15; 2 April 1901, Lewis & Clarke pressbook, FNF CR; Elers Koch, 28 November 1906, "Report of the Section of Inspection," entry 7, box 4, RG 95, NA).

Forest supervisors in 1899 were required to be familiar with all the conditions in their forests, especially forest fires. They had to make sure that cloth notices of the forest fire act of 1897 were posted and that people within the reserves were warned about being careless with campfires. Supervisors also had to make sure the rangers did their assigned tasks. They had to fill out weekly and monthly work reports, plus detailed reports on any forest fires and associated expenses, including the probable market value of the timber burned and the effects on the forest

cover and water supply. Rangers, the field men, were required to patrol their districts, extinguish fires, report all fires, and make monthly reports of their daily work (Hermann 1899:196, 199).

The early rangers were hampered by their lack of funding and authority and by the fact that the forest reserves were not adequately surveyed for several years. Although the rangers wore round nickel badges to show their authority, until 1905 they had no power of arrest without a court warrant (Pyne 1982:232).

In the early GLO days, very few rangers worked on the Forests. In mid-September, 1901, for example, there were 13 rangers on the Flathead Forest Reserve, 16 on the Lewis & Clarke, 6 on the Bitter Root, and 1 on the Gallatin. Even so, these rangers were a new and often unwelcome presence in the woods. Clarence B. Swim, a ranger on the Yellowstone Forest Reserve in Wyoming, recalled a westerner commenting in 1904, "Are you a forest ranger? God, rangers are getting thicker than fiddlers in hell!" (J. B. Collins to F. N. Haines, 17 September 1901, RG 95, NA; USDA FS "Early Days" 1944:185).

The bureaucracy - in the form of written reports - was fairly extensive even in the early years. In 1901 Supervisor Moser attempted to interpret GLO requirements to ranger Ernest Bond of Holt: "When you state in your report that it rains or storms, you must state the duration and extent of same, to say it 'rained' won't do, the Department wants to know how hard it rained etc." But on the same day Moser wrote another letter to his superior complaining: "I am astonished, at the same time it seems that the Department thinks we are so endowed, that in a period of 5 months in the year, we can become thoroughly acquainted with a wild and undeveloped country and sit at our desks and make reports." Rangers were also required to report where they were on Sundays, even though they were not expected to work for the government on that day (J. B. Collins to F. N. Haines, 17 September 1901, entry 13, box 5, RG 95, NA; 12 June 1901, Lewis & Clarke pressbook, FNF CR).

Adding to the difficulties, communications between rangers and the forest supervisor were often delayed (telephones and radios were not yet available). For example, on the Lewis & Clarke reserve in 1901 it often took 10-14 days for a letter to make a round trip to the rangers. It could be very complicated and time-consuming to obtain needed supplies, too. For example, when Gust Moser needed four cross-cut saws he had to request them from Superintendent J. B. Collins in Missoula, who received authorization for the purchase from the GLO Commissioner in Washington, D. C. Collins then purchased the saws and had them shipped to Ovando, and Moser had to advise Collins of their receipt (24 May 1901, Lewis & Clarke pressbook, FNF CR; J. B. Collins to Gust Moser, entry 13, box 2, RG 95, NA).

Early forest rangers were given little or no training or instructions. The first U. S. forest ranger, Bill Kreutzer, was hired in Denver in August of 1898. He was instructed to "take horses and ride as fast as the Almighty will let you and get control of the forest fire situation on as much of the mountain country as possible. And as to what you should do first, well, just get up there as soon as possible and put [the fires] out" ("William R. Kreutzer" 1947:765).

Gifford Pinchot worked hard for the transfer of responsibility from the Department of Interior under the GLO to the Department of Agriculture. In 1898 he became the Chief of the Division of

Forestry, and after 1900 he served as the head of the new Bureau of Forestry in the Department of Agriculture (Hays 1959:29). Pinchot changed the name of the Bureau of Forestry to the Forest Service in 1905 to show that the administration was a service, and he changed the name of the forest reserves to national forests in 1907 to show that land was not actually withdrawn.

Yet in 1905 it was difficult for Pinchot to hire foresters to work for the Bureau of Forestry. In that year, only about 75 foresters had graduated from a college offering professional forestry training. When the forest reserves came under his supervision, Pinchot made the young foresters who had been doing boundary surveys in 1903 and 1904 into inspectors; their job was to weed out the "worst incompetents" among the political appointees and replace them with new men. According to Elers Koch, one of the inspectors in Region One, "It was like a fresh wind blowing through an old, corrupt, and hide-bound organization. We went to it with the enthusiasm of youth" (Randall 1967:28; Elers Koch, 11 June 1940 memo, 1680 History, "Region One History and History of the Forest Service," RO; Koch ca. 1940).

Gifford Pinchot helped shape the conservation movement of the late 1890s and early 1900s. Professionals set the tone, and the focus was on rational planning to promote the efficient development and use of all natural resources. The emphasis on saving trees from destruction shifted to sustained-yield forest management over the long term. Both private and public forest leaders promoted a stable and permanent lumber industry (Hays 1959:28-29, 35).

In 1903 Pinchot declared, "The object of our forest policy is not to preserve the forests because they are beautiful...or because they are refuges for the wild creatures of the wilderness...but...the making of prosperous homes" (Hays 1959:42). In 1905 Pinchot wrote a letter (signed by the Secretary of Agriculture) that stated the objectives of forest reserve administration as follows:

it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people and not for the temporary benefit of individuals or companies. All the resources of forest reserves are for use, and this use must be brought about in a thoroughly prompt and businesslike manner...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 (1 February 1905 letter, 1680 "Region One History and History of the Forest Service," RO).

In 1910 Gifford Pinchot was replaced by Henry Graves because of a political controversy at the national level, but Pinchot's ideas continued to guide Forest Service management of the national forests for decades to come.

Forest Supervisors and Rangers on the Flathead and Lewis & Clarke Forest Reserves, 1898-1905

The director of the GLO appointed J. B. Collins as the superintendent (with headquarters in Missoula) of the new forest reserves in Montana and Idaho. Major F. A. Fenn replaced him in 1903. Gust Moser was the first supervisor of the Lewis & Clarke Forest Reserve (out of Ovando), and William J. Brennen the first supervisor of the Flathead Forest Reserve (out of Kalispell) (see Figure 18). In June of 1899, 9 rangers were assigned to the latter and 6 to the

former. In July, 9 additional rangers were assigned for the state (Baker et al. 1993:46-47; Hermann 1899:199).

Flathead National Forest

1898-1903 Gust Moser
 1904-1905 Adelbert M. Bliss
 1905-1913 Page S. Bunker
 1913-1914 F. A. Fenin, Acting
 1914-1915 Donald Bruce
 1916-1919 Joseph D. Warner
 1920-1922 Kenneth Wolfe
 1923-1930 Lloyd G. Hornby
 1931-1934 Kenneth Wolfe
 1935-1945 James C. Urquhart
 1945-1962 Fred J. Neitzling
 1962-1971 Joseph M. Pomajevich
 1971-1977 Edsel L. Corpe
 1977-1984 John L. Emerson
 1984-1990 Edgar B. Brannon, Jr.
 1990- Joel Holtrop

Blackfeet National Forest

1898-1903 William J. Brennen
 1904-1910 Fremont N. Haines
 1911 John F. Preston
 1911-1919 Robert P. McLaughlin
 1920-1921 E. H. Myrick
 1922-1924 Leslie F. Vinal
 1925-1927 James E. Ryan
 1928-1932 William Nagel
 1933 Ralph Space, Acting

Figure 18. Supervisors of Flathead and Blackfeet National Forests, 1898 to present. The two Forests were combined under the name of the former in 1933 (17 April 1958 memo, FNF - FS Personnel, RO; Shaw 1967:31; FNF records).

Binger Hermann served as Chief of the GLO in the late 1890s, and he saddled the Division of Forestry with many inefficient political appointees. During this period (1898-1905), "Politicians considered the position of forest supervisor as a patronage plum...and bitterly criticized the General Land Office when it selected trained men for the post" (Kerlee 1962:16; Hays 1959:38).

Not a man to mince words, Pinchot described the GLO's field force on the forest reserves as "enough to make angels weep," noting that the political appointees were full of "human rubbish" (Pinchot 1947:167). In defense of the GLO, however, at the time the reserves were created a pool of men technically and administratively trained to manage the public forest reserves did not yet exist.

Gust Moser, the first supervisor of the Lewis & Clarke Forest Reserve, had close political ties to Montana lumber company interests. He had previously served as secretary for the Montana Improvement Company, a large early lumber company in Montana associated with the Anaconda Mining Company (ACM). In 1895 powerful lumberman A. B. Hammond, with the help of Northern Pacific Railroad officials, tried to have Moser appointed the federal Mineral Land

Selector so he could serve their interests (Butcher 1967:76-77). It is likely that Moser's appointment as supervisor of the Lewis & Clarke Forest Reserve had political implications.

Gust Moser was one of the GLO appointees who was replaced because of incompetence. According to inspector Koch:

It is alleged that he [Moser] and his wife used to meet the rangers coming in for their monthly paychecks and mail, and that her wiles and other attractions, together with Gus' superior skill at poker, usually resulted in separating the rangers from most of their pay (USDA FS "Early Days" 1944:101)

In 1904 the GLO commissioner agreed with Koch's negative evaluation of Moser, recommending that he be dismissed. The Commissioner stated that Moser was "an habitual drunkard; that he indulges in prolonged seasons of drunken and disreputable conduct and refuses to satisfy his honest financial obligations, and that he had accepted compensation to which he was not entitled to for official favors; that he has shown favoritism to some of the forest rangers serving under him, to the detriment of the service, and knowingly approved false service reports submitted" (W.A. Richards to Secretary of Interior, 16 April 1904, entry 17, box 1, RG 95, NA).

Adelbert M. Bliss, Moser's successor, according to Koch, was "a nice old man, but quite incompetent, and his only excursions to the forest were drives in a buckboard over the only road in the reserve, to Holland Lake." Bliss had attended law school, served as a clerk in various government agencies, and had been a miner. His appointment was recommended by Senators Joseph Dixon, Thomas Carter, and others. His political connections were not strong enough for him to keep his job when the Forest Service took over, however; Bliss was removed in 1905 and his head ranger, Page Bunker, was made supervisor (31 May 1904, entry 17, box 1, RG 95, NA; Koch ca. 1940).

The first supervisor of the Flathead Forest Reserve, William J. Brennen, was considered "one of the most picturesque and best known men in public life in the state," and he also reportedly had close ties to the ACM (see Figure 19). A native of Watertown, New York, he worked for the Northern Pacific Railroad, coming to Montana in the early 1880s. In 1889 he opened a law office in Helena, but he moved to Kalispell in 1891. He was nicknamed "Tin Plate Bill" in 1896 because of his support of the McKinley tariff measure. President McKinley appointed him supervisor of the Lewis & Clarke Forest Reserve (North) in 1898, to receive \$5 per day and \$1.50 for subsistence. Brennen had useful political connections; he counted as friends Theodore Roosevelt, President McKinley, and Senator Thomas H. Carter of Montana. Brennen resigned as supervisor in the early 1900s, although he later served as a state forester from Flathead County. From 1904 until 1908 he was a state senator from the Flathead, and in 1913 he returned to law practice in Kalispell (Stout 1921: III, 822-23; "Brennen's Plum," *Flathead Herald-Journal*, 21 July 1898; "W. J. Brennen Pioneer of State Dead," *Flathead Monitor*, March 15, 1928:1; "Senator W. J. Brennen Crosses Great Divide," *Kalispell Times*, 15 March, 1928; Ingalls ca. 1945).



Figure 19. William J. Brennen, first supervisor of the Blackfoot National Forest (Stout 1921).

Fremont N. Haines replaced Brennen in 1901, after a senator offered Haines the choice of working as a postmaster in the East or as a forest supervisor in Montana. Early ranger Joe Eastland commented that Haines at first "would have got lost in a big orchard." But, he worked hard and was well liked. Haines resigned in 1910 and settled with his family in Kila (O. Johnson 1954:12-14; *Kalispell Bee* 25 September 1901:3; *Kalispell Journal* 17 November 1910; *Flathead Monitor* 7 July 1938).

The early rangers were usually western men familiar with the outdoors. Often they had worked on ranches, been miners, worked in a lumber camp, or served in a war (particularly the recent

Spanish-American War). Rangers under the GLO did not have to undergo a field test before being hired, as they did after 1905. The multitude of difficulties facing early rangers, no matter their experience, are described eloquently in this letter Belton (West Glacier) ranger George R. Rhodes wrote to supervisor A. M. Bliss in Ovando in 1904:

I have no Manual of Instructions for Rangers neither have I a Badge and I would be very thankful to you to Forward them to me as it will save a good lot of dispute that may arise from various sources in the Line of duty which I have to Perform (17 July 1904, FNF Class).

One Region One employee described his job in 1899 as follows. He said, "No equipment was furnished in the early days except a small amount of letterheads and a few franked envelopes...As we did not receive any, or but few, instructions, we did about as we pleased." He was told to patrol his district and familiarize himself with the topography of the country. In 1900 he and his coworkers began to retrace and cut out the down timber blocking the old Native American trails, then locate and mark the forest boundaries. They also started administering the free use of timber and grazing and prosecuting timber and grazing trespassers. Distinguishing the valid timber claims, established before the forest reserves were designated, from the invalid claims "made much unpleasant work" (Than Wilkerson, "Some of the Things Done and Conditions Under Which They Were Accomplished," 1680 History - Region One History and History of the FS, RO).

The rangers often met with local hostility since they had to sell the forest reserve idea to a suspicious public. The first ranger in the North Fork had a rough start, according to homesteader Eva Beebe. "They didn't want rangers up there," she said, so some of the homesteaders challenged him while hiding behind trees and forced him to drop his gun. Ironically, one of those men may have been Chaunce Beebe, who by 1917 was working as a ranger in the National Park Service (Beebe 1974).

One ranger, Jasper B. Seeley, was considered "a hard and tough man with a good sense of justice, but inclined to enforce regulations up to the hilt." One time he caught a man in the act of setting a forest fire. He arrested him and brought him to Ovando. When Supervisor Moser proved unwilling to bring the case to trial, Seeley started back with his prisoner. On the way he decided that "if the law would not act he would see that justice was done himself, stopped the horses, jerked the man off his saddle, and proceeded to half flay him with a black snake whip he carried" (Koch ca. 1940).

Some of these original Flathead rangers were personal friends of Teddy Roosevelt's. In 1900 President Roosevelt appointed Fred Herrig to patrol the country drained by the North Fork; he was stationed in the Indian (Akokala) Creek area. Herrig served as ranger of the Fortine District from 1901 until 1919. When he retired from the Forest Service in 1925, he had served at one station longer than any other man in the Forest Service up to that time. Herrig was originally from Europe; he came to the United States in 1875 when 15. For about five years, Herrig worked for Teddy Roosevelt at his ranch near Medora, North Dakota, and he served as Roosevelt's orderly in the Spanish-American War (Robinson & Bowers 1960:51; M. J. White ca. 1990; O. Johnson 1950:262).

According to the state forester in the area, Herrig "would do what he pleased, when he pleased, as he pleased, but there had to be plenty of Schnapps around to keep him going." Many stories are told about this colorful ranger. Herrig patrolled his domain on a black saddle horse accompanied by a Russian wolf hound. He wore silver spurs, his horse sported a silver-studded bridle and martingale, he carried a rifle in his saddle scabbard, and he wore a .38 revolver given him by Roosevelt (Cusick 1986:41; Yenne 1983:13).

In 1900, according to ranger Joe Eastland, rangers would do most of their work on foot, carrying their food and tools. Their tools included their badge, a marking axe, a notebook, a pencil, and a book of regulations. "And there was no use to lay off during bad weather, as the grub would play out." Also on the subject of food, ranger Frank Liebig in 1900 commented that while in the Lake McDonald area, "Bear meat was my main diet, as I had to declare war on these animals as they broke into my camps very often and destroyed my grub" (O. Johnson 1950:260; L. Wilson 1986).

According to the 1899 log books of Lewis & Clarke Forest Reserve rangers, their time was primarily occupied with travelling, cutting timber from trails and roads, patrolling, posting fire warnings, clearing and piling brush and tree tops, and other similar activities. They generally worked from 8 a.m. to 6 or 7 p.m., did not take Sundays off, and came "out" once a month to report to the forest supervisor. For example, on June 12, 1899, Thomas Danahar [sic] wrote, "went to White River 12 miles down the South Fork of Flathead worked on trails." The next day he recorded, "Came back, met Indians they were camped opposite Gordon Cr. six of them, came up to the mouth of N. Fork of S. Fork distance 12 miles." Danahar had a ranch in the area now known as Danaher Basin. In 1904 Forest Superintendent F. A. Fenn recommended that Danahar be dismissed because he "occupied his time attending to personal affairs when he should have been performing the duties connected with his position as forest ranger." Perhaps ranch work kept him from his ranger duties (1899 log book, FNF CR; 19 May 1904, entry 17, box 1, RG 95, NA).

Some of the jobs assigned to early rangers were unusual, such as when the forest supervisor instructed Belton ranger George Rhodes in 1905 to monitor the amount of liquor sold by E. E. Dow in his Belton business. Two weeks later Rhodes was told to walk 8 miles to and from work each day in order to work on making the old railroad tote road passable, "even though snow will hinder the work" (14 January 1905, "Rangers 1-1-05 to 6-30-05" pressbook, FNF CR; 24 January 1905, "Rangers 1-1-05 to 6-30-05" pressbook, FNF CR).

Two of the early rangers on the Flathead Forest Reserve told the same amusing (and probably exaggerated) story about their supervisors' lack of comprehension of their daily work. Frank Liebig and W. H. Daus each claimed that the Washington Office sent him a leaf rake to clean the forest floor and a leather bucket for carrying water to put out fires (Myrick 1929:2).

Frank Liebig moved to the Flathead area after working as a foreman on a cattle ranch in eastern Montana (see Figure 20). Educated in forestry in Germany, he left Europe to escape military service. In 1900 he was hired to survey oil claims in the Kintla Lake area for a Butte company. He then took up oil claims on his own in the Belly River drainage. In early spring of 1902, F. N. Haines offered him a job as forest ranger for \$60 a month, if he furnished his own horses and

boarded himself. Liebig took the job because he was offered the chance of a promotion. He was assigned a half a million acres on which to build trails and to patrol for fires, timber thieves, fraudulent miners, poachers, squatters, and game violators. That first year he had only two men to help him during the fire season. Haines gave him a double-bitted axe, a one-man crosscut saw, and a box of ammunition, and told him, "go to it, and good luck." Liebig covered the area from Belton north to Canada, including the land east of Lake McDonald all the way to the Blackfeet Indian Reservation. He worked in that area until the Park was designated in 1910, then continued to work for the Flathead National Forest until he retired in 1935. Liebig was also well-known for his skill as a taxidermist (many of his specimens are now in the Glacier National Park collection) (USDA FS "Early Days" 1944:129-130; Flathead County Superintendent 1956:14; "Winston and Liebig Retire" 1935:1; Vaught Papers 1/L).



Figure 20. Frank Liebig standing on rock cairn at Swiftcurrent Pass, Lewis & Clarke Forest Reserve (North), 1906 (now part of Glacier National Park) (courtesy of Glacier National Park, West Glacier).

Many of the early rangers were homesteaders or squatters on land within the reserve. One example was Frank Geduhn, who lived at the head of Lake McDonald (see Figure 21). In 1896 he wrote, "I have been here six years, working up trade with summer tourists, when there were any; trapping for marten and other furs in the winter. It has been a continual fight for a bare existence; but loving these romantic surroundings and hoping for better times, I keep battling on." Geduhn's "battle" was aided by an appointment as ranger of the North Fork and Camas

Creek areas in 1899 (Buchholtz 1976a:40-41; L. C. Hoffius to Vaught, 126 June 1899, Vaught Papers 4/C).



Figure 21. Frank Geduhn at foot of Logging Lake, ca. 1907 (courtesy of Glacier National Park, West Glacier).

Geduhn was originally from Germany and had been trained in forestry there. He lived approximately five years in British Guinea before coming to the Flathead Valley in 1894. He developed a "cabin camp" for tourists at the head of Lake McDonald, and he worked off and on for the Forest Service in that area. His supervisor described him as "deeply interested in his work" and mentioned that he had been experimenting with transplanting different trees at the head of Lake McDonald (J. B. Collins to GLO Commissioner, 20 August 1901, entry 13, box 5, RG 95, NA; Harrington, ca. 1957:38). According to a woman whose family bought land from Geduhn:

I cannot speak too enthusiastically of the utter devotion and loving care with which these early Forest Rangers, first Frank Geduhn, then Frank Liebig, guarded their territory...Each morning at daybreak Mr. Geduhn would start forth on his old black horse, his little dog trotting beside, with an axe and a saw, a little package of food and a blanket roll if, on the longer trips he would have to stay out overnight...he kept the trails in perfect condition with never a downed tree to interfere with the visitor's progress. Yet, in spite of his strenuous days, he was always ready to join the guests of his camp at the campfire where he would keep everyone entertained for hours with his tales of adventure. Or on rainy nights he would get out his old fiddle and play and call for square dances in which even the children joined (Harrington ca. 1957:27).

Other early Flathead rangers were perhaps not the best representatives of the federal government available. One of these was "Slippery Bill" Morrison, who had come west as a brakeman on a GNR construction train, quoted Shakespeare freely, and had a "tongue like a two-edged sword." Morrison was appointed forest ranger in the early 1900s, and at the same time he ran a saloon at Summit that catered to railroad passengers and featured "gambling and other accessories on the side" (Johns 1943:V, 6; Atkinson 1985:15). According to forest ranger E. A. Woods:

Slippery Bill told me how he would stand in the door of the saloon, gaze at the distant landscape, return to the shelf where he kept the Government records, and write in his official diary, 'Looking over the Forest.' One of his contentions was that a good healthy porcupine could destroy more timber than a Forest ranger could save (USDA FS "Early Days" 1944:213).

In 1906 inspector Elers Koch discussed the pros and cons of John Sullivan, assistant ranger at Spotted Bear. Koch described John Sullivan, or 'The Bull of the Woods,' as an:

ex-prizefighter, ex-lumberjack, [who] is an ignorant, illiterate, ill-tempered native of the state of Maine. On account of his temper he is a difficult man for some of the rangers to get along with, and is somewhat addicted to going on a spree occasionally, though he has been much better in that respect in the past year. In spite of all these bad qualities he is an excellent man for a certain class of work on this reserve. He possesses almost a genius for laying out trails, and a bad grade or a poorly cut out piece of trail will never let him rest easy. He is an excellent axeman, and a good man at cabin construction. He is an experienced woodsman, and will make his way alone with his pack horses into the roughest kind of a country... While his illiteracy will prevent his ever rising above the grade of assistant ranger, he is decidedly a man worth keeping for work on this particular reserve, though he would be worse than useless on a reserve like the Big Belt (Elers Koch, 28 November 1906, "Report of the Section of Inspection," entry 7, box 4, RG 95, NA).

Another early ranger was Albert Reynolds, appointed in 1901 at the age of 53. He was stationed near the foot of Lake McDonald; he had retired from supervising the Butte & Montana lumber mill operations near Kalispell to escape the "nervous strain" of that work. Like many woodsmen of the time, he seldom wore a coat in the woods; for warmth, he relied on physical exertion. If caught out overnight in the woods without shelter, he would build a fire and sleep beside it (Buchholtz 1985:50; O'Neil 1955:71).

Joe Eastland started work in 1900 for \$60 a month. He checked mining claims, helped cut a boundary line along the west edge of the reserve, and constructed trails (including a 46-mile trail across the Whitefish Divide at Grave Creek). Eastland reminisced:

Well, in those days we worked out in all kinds of weather, winter and summer, long hours and short pay, and almost no equipment. But the country was fresh and unspoiled, and resting by the campfire was good enough after a hard day. We weren't served any fancy store food - but what else could equal the blue grouse and dumplings we used to

have so often, or a frying pan of fresh trout, or a venison steak broiled over the open coals. We lived pretty high at that (O. Johnson 1954:12-14).

FOREST SERVICE ADMINISTRATION, 1905-1960

Introduction

Soon after its establishment in 1905, the Forest Service achieved a reputation for bureaucratic efficiency and extraordinary *esprit de corps*. This was due to the relative youth of most of the field personnel, the personal dynamism of Gifford Pinchot, and the emphasis on decentralized authority (Caywood et al. 199 1:22). The daily work of pre-World War II forest rangers on the Flathead National Forest varied greatly, but almost all spent most of their time in the field. Besides managing timber sales, fighting forest fires, building trails, and issuing grazing permits, Flathead employees established administrative sites in the backcountry, issued special-use permits, sent foresters to join forest regiments in both World War I and World War II, negotiated complicated land exchanges, and participated in the planning of access roads and timber salvage related to the new Hungry Horse Dam.

As administrative needs changed, some of the land on the Flathead and Blackfoot National Forests was transferred to other Forests, primarily the Kootenai to the west and the Lewis & Clark to the east. In 1910 the designation of Glacier National Park removed a large amount of land from Forest Service jurisdiction.

The creation of the Bob Marshall Wilderness in 1940 has done much to preserve the administrative buildings - and way of life - of the Flathead National Forest of the 1930s era. The historic Big Prairie Ranger Station complex is an evocative, living reminder of a way of life that has vanished on most other national forests. Supplies are still brought in by pack strings, about 40 miles of the old telephone system is still in use, and workers still wield crosscut saws and other non-motorized tools within the Wilderness. The major change is the almost complete dismantling of the extensive fire lookout network that once had such an important role to play. The Spotted Bear Ranger Station, also in the South Fork but accessible by road, has several well-maintained historic buildings at its complex, plus a number of artifacts relating to the Forest's history on display for visitors.

Qualifications of Early Forest Service Workers

The Forest Service's 1907 Use Book described the requirements for being hired as forest rangers as follows:

[Forest rangers] must thoroughly know the country, its conditions, and its people...The Ranger must be able to take care of himself and his horses under very trying conditions; build trails and cabins; ride all day and all night; pack, shoot, and fight fire without losing his head. He must know a good deal about the timber of the country and how to estimate it; he must be familiar with lumbering and the sawmill business, the handling of livestock, mining, and the land laws. All this requires a very vigorous constitution...It is not a job for those seeking health or light outdoor work (Pinchot 1907:33).

In short, as Gifford Pinchot himself said, forest rangers needed to combine the skills of a naturalist with those of a business man (Steen 1976:83).

Because of western resistance to the new land use policies enforced by the Forest Service, the Transfer Act of 1905 (which changed the administration of the forest reserves from GLO control to the Forest Service) required administrators to hire local men whenever possible. In 1905 inspector Elers Koch conducted three ranger examinations in the region. These tests included two days of field events and a one-day written exam. The field exam covered rifle and pistol shooting at a target, riding a horse, putting on a pack, compass surveying and pacing, use of an axe, and cruising a block of timber. The last field exam in Missoula took place in the spring of 1910 (Caywood et al. 1991:18; USDA FS "Early Days" 1944:109-110).

The badge and uniform served as outward symbols of forest rangers' authority. When the Forest Service was created in 1905, Gifford Pinchot organized a contest among Washington Office employees to create a unique Forest Service badge to replace the nickel one worn during the GLO period of administration. The resulting tree emblem came from this contest, and the shield shape was thought to convey a sense of authority. The original solid-bronze badge was reduced to half its size in 1915. The Forest Service introduced a uniform for its workers in 1906; the style, color, and materials have varied greatly over the years, alternating between a quasi-military and a quasi-civilian appearance. For a long time, most field workers wore whatever they found most comfortable (generally blue jeans). No uniform allowance was provided until 1955. In 1934, according to new regulations, Region One permanent personnel had to wear the Forest Service dress uniform, even in the field (although forest guards could eliminate the standard coat). Permanent employees could wear work clothes (of similar color and design) only when the work would cause their clothes to become badly soiled within a short period or if they had no contact with the public. No "off-shape or off-color hats, shirts, or ties" were allowed (Harmon 1980:188, 190-191, 194; Silcox 1935:3-4).

Early Forest Service salaries were generally low compared to similar government work. in the early 1920s, according to inspectors, the Flathead National Forest was paying less than other Forests, with the result that:

less than half the guards are experienced, self-reliant woodsmen. Too great a number may be described as 'kids' - that is young fellows whose age and lack of experience has not fitted them for the pioneer work required of them. Some of them are absolutely useless; they can't chop, can't cook, can't start out alone and get to a fire (Flathead 1920-23 Inspection Reports, RG 95, FRC)

This problem apparently persisted on the Flathead. In 1937, an inspector reported that some of the young men working on a trail crew were "pool-hall punks from Kalispell" (Inspection Reports, Region One, 1937-, RG 95, FRC). The inspectors recommended revising the salary schedule so that the Forest could hire two good men rather than three poor ones.

Daily Work of Early Forest Service Employees

The jobs of early rangers and forest guards were varied. Most personnel, especially those on the local level, helped in all aspects of forest management. When the forest reserves were transferred in 1905, Pinchot gave highest priority to boundary surveys (adjusting existing reserves and examining proposed reserves). Major programs involved protecting the forests from fire, insects, and disease; inventorying the timber; posting boundary and fire notices; reseeding or replanting timber already cut; and managing grazing resources. On the Flathead, those employees who were proficient surveyors worked all over the Forest surveying administrative and homestead sites. They also constructed buildings, corrals, trails, and roads as needed (Steen 1976:84; "Miscellaneous Work 1905" pressbook FNF CR).

As had been the case under the GLO, the early Forest Service expected much of its employees but gave little support in the field. The men were expected to be self-reliant and thoroughly capable. In November 1905, for example, Forest Supervisor A. M. Bliss wrote to deputy ranger John Sullivan:

Get your supplies in for the winter to some point to which you can most readily reach all points along the South Fork Valley. Will trust to your judgment. You will find a store at Bear Creek. / Burn all the brush you can. Go to Columbia Falls the last of December for mail and further instructions. / Prepare yourself for snowshoeing ("Misc Work 1905" pressbook, FNF CR).

Rangers also patrolled to prevent trespass of various sorts, from timber trespass to poaching to the illegal use of Forest Service buildings. For example, in 1915 forest guard Charles Emmons found that someone (probably trappers) had lived in the Lake Roger Ranger Station cabin for several weeks and had stolen cooking utensils and tin dishes. He reported, "The cabin was left in a condition of filth almost beyond description" (FNF Lands).

The tasks in the early years were primarily custodial, and much energy was put into developing the transportation network. Most of the field work was done in the name of "presuppression," including mapmaking and developing communication systems, roads, and trails. The ranger's year was divided into fire season and non-fire season. Rangers and summer guards were spread thin over the backcountry. For example, in 1907 each Lewis & Clark National Forest ranger district covered about 600,000 acres, and each ranger had about five guards working for him during the summer. More specialists' jobs were created in the 1920s (Clack 1923a:7).

The Forest Service hired relatively few office workers during the early years. In 1905 Supervisor Page S. Bunker asked for a clerk to remain in the office during his absence and noted that he would prefer a man who could use a typewriter. As the work load increased, so did the number of employees, both in the office and in the field. In 1905, each forest reserve averaged about 8 employees, including clerks and stenographers. By 1939, the Flathead National Forest employed 19 year-round and 200 seasonal employees. This had increased dramatically to 121 year-round employees by 1964 (Shaw 1967:2, 5; Winters 1950:9).

The ranger districts on the various forest reserves/national forests modified their boundaries frequently. For example, in 1898 the Flathead Forest Reserve was divided into two districts, but by 1900 it had been divided into 24 ranger districts. Soon after this the number of districts was greatly reduced. Beginning in the 1920s, the ranger districts in Region One were steadily enlarged due to improved transportation and communication facilities (see Figure 22) (J. B. Collins to GLO Commissioner, 10 May, 1900, entry 44, box 3, RG 95, NA; Caywood et al. 1991:42, 46, 49).

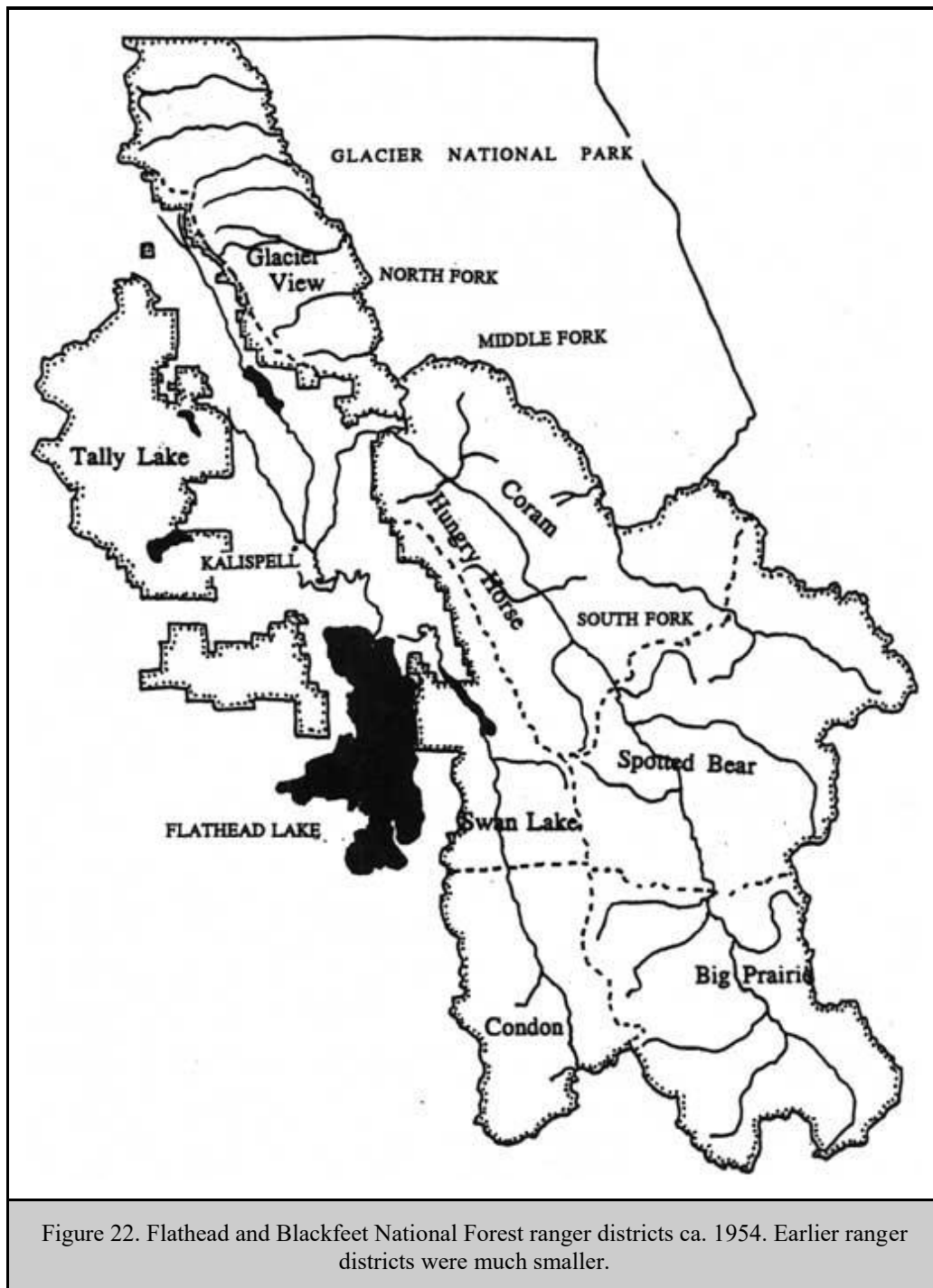


Figure 22. Flathead and Blackfoot National Forest ranger districts ca. 1954. Earlier ranger districts were much smaller.

In 1908 Pinchot established field headquarters in six Districts (now called Regions), one of which was in Missoula. Previously, the nation's Forests had been divided into three Districts. The Forest Service used inspections by men from the Washington or regional offices to assist officers in their duties. These inspections were very detailed. For example, an inspector who visited Hemlock Lookout in 1937 "stressed the importance of having more system in the filing of his food supplies in the cupboards" (Steen 1976:77, 80; Inspection Reports, Region One, 1937-, RG 95, FRC).

In 1905 the Forest Service issued a pocket-sized Use Book, with a brief summary of Forest regulations, for field personnel and the general public. Not all employees read this manual promptly upon being hired. Jack Clack, hired to work on the Lewis & Clarke National Forest in 1907, met Gifford Pinchot there. Pinchot asked if he had read his book of instructions, and Clack replied honestly, "Hell, no. I haven't received any mail for three months" (Caywood et al. 1991:22; Bloom 1933:3).

Time spent in the office was minimal in the early years. According to Flathead National Forest retiree Pat Taylor, "The Ranger would only get a thin manilla envelope a week from the S. O. He would usually stay in Saturday afternoons or perhaps all day to do his office work. The rest of the time he was in the field" (see Figure 23). Some of the work kept the ranger station operating smoothly. For example, in 1924 Ralph Thayer spent one day in September at Moran Ranger Station splitting wood, cleaning the barn and root house, picking up tools, and washing dishes (Taylor 1981; Thayer 1924).

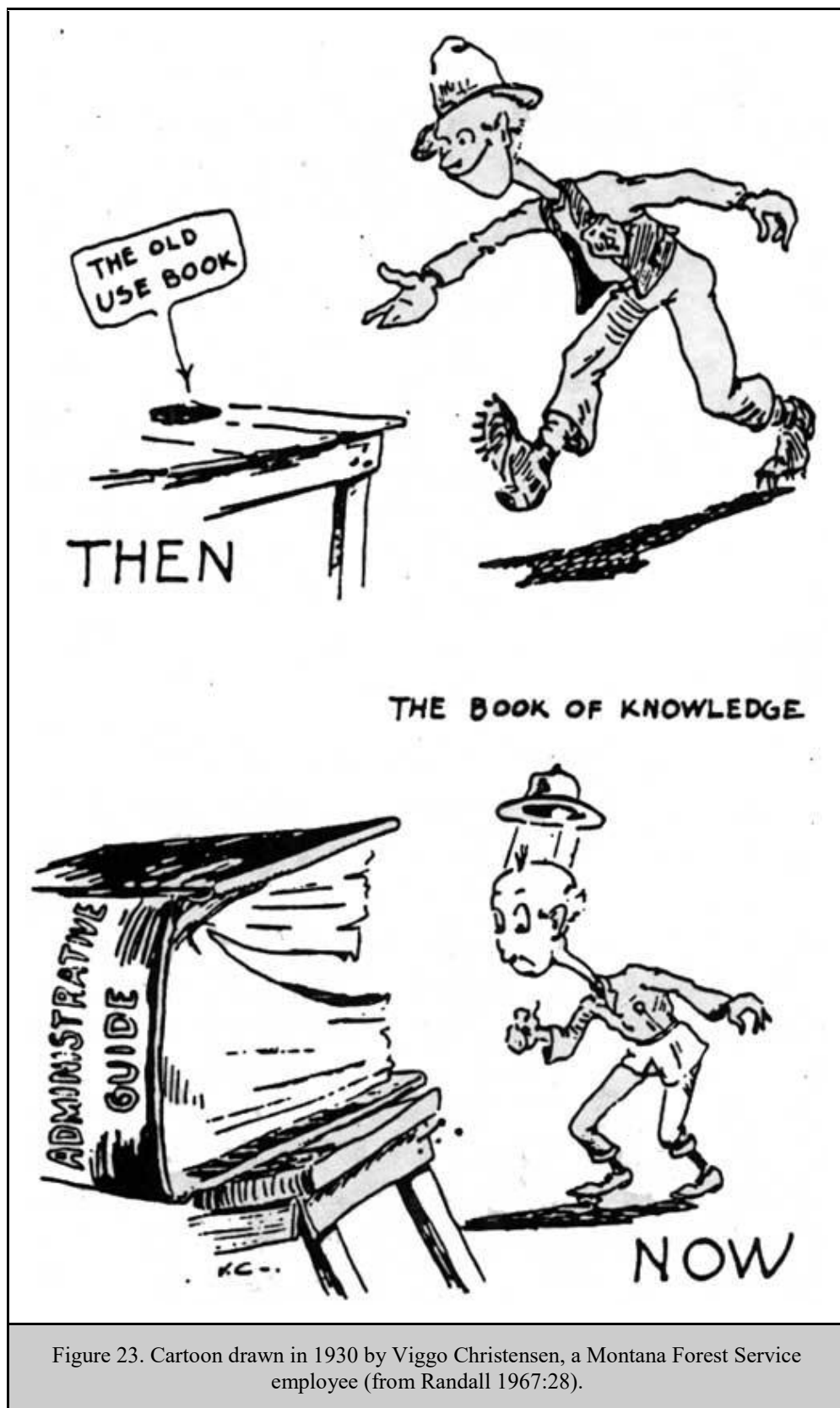


Figure 23. Cartoon drawn in 1930 by Viggo Christensen, a Montana Forest Service employee (from Randall 1967:28).

In the early 1920s a number of Flathead National Forest employees undertook an inventory of three "activities" on the forest: silviculture, grazing, and fire. The men carried their supplies and tools on backpacks, making maps as they went. Frank Liebig described these as follows:

It is a man's job all right, and he has to have an eagle eye, climb like a billy goat, swim like a fish, and run over the windfalls like a squirrel, but, 'Oh, joy,' when you do hit the headwaters and climb the mountains peaks, what a wonderful scenery a man can get" (Liebig 1924:8).

Liebig and others covered 1,001 acres per man-day on the Middle Fork survey, and he casually mentioned that the work was done on contributed time, available because the fire season was easy (Liebig 1924:9).

Forest ranger Clyde Fickes described how he traveled on the Lewis & Clark National Forest in 1908. He rode a saddle horse followed by a packhorse on a lead rope with canvas pack bags. His load of 180 pounds included two frying pans, three tin plates, a coffee pot, table knives, forks, spoons, a hunting knife, an ax, a shovel, a cross-cut saw, a rifle, a camp bed, clothing, a rain slicker, and food. He spent about half his time traveling in this manner, cutting logs out of the trail as he went. When he arrived at his destination he would unsaddle the horses and turn them out to graze. He would then collect dry wood, get a fire started, pitch his 7'x 9' tent, and spread his bedroll over fir boughs. After eating, he would wash the dishes, smoke a pipe or cigarette, check the horses, and tie them up for the night (Fickes 1973:32-33).

Clyde Fickes started his Forest Service career on the Lewis & Clark National Forest. In 1907 he was appointed forest guard at a salary of \$720 per year. His early work was to survey and plat administrative site withdrawals and homestead claims. Near Swan Lake he met ranger Jack Clack (see Figure 24) (Fickes 1973:3, 5, 7). He described Clack as follows:

He was a tall, well-built man, brown as an Indian, sitting on a long-legged bay horse and leading a packhorse. Bareheaded, his hat on the saddle horn, he ran his hand back over his bald head; it came away covered with mosquitos and blood, which he nonchalantly shook off as he greeted us" (Fickes 1973:7).

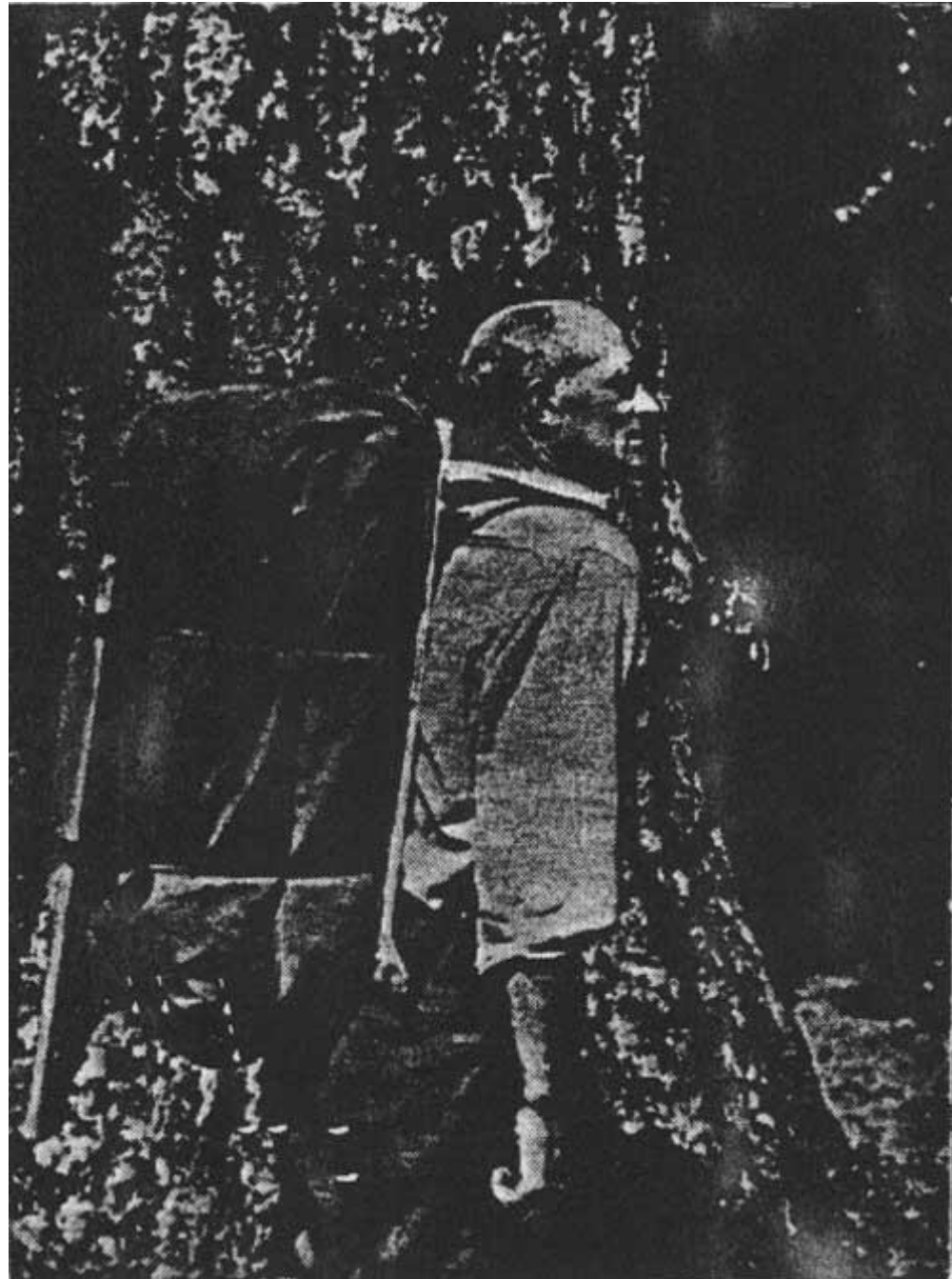


Figure 24. Jack Clack wearing the packframe that he designed (from Swan 1968).

Not all Forest Service workers enjoyed being alone in the field so much of the time, especially those who had girlfriends in town. One seasonal employee wrote in his diary of August 1908:

Gosh but I am lonesome wish I had someone to talk to have made up my mind that I don't want to be alone much in the mountains. I am going to Java tomorrow where I can talk to

the miners and Japs. I am still thinking of Mary (28 August 1908, FNF employee log, FNF CR)

By the 1930s the Forest Service had developed three types of backcountry camps for employees: permanent, such as guard stations; tent camps; and the more temporary "gypsy camps." Tent camps were usually 6-10 miles apart and located at trail intersections with a good water supply.

Most of the field workers were in their 20s, and although whiskey was available (despite Prohibition), the low wages controlled the drinking. According to Pat Taylor, "Among the crews there was lots of joking, bantering and good natured practical jokes." Evening conversation, he recalled, generally revolved around the merits of various boots and guns (Taylor 1986; Taylor 1988).

At a typical trail crew camp, the person assigned to be cook would get up an hour early to build a fire in the wood stove and make the coffee. He would carry in buckets of water from the creek and whittle shavings if he had not done so the night before. Unless they were on a fire, men on backcountry crews worked six days and spent Sundays washing clothes. The men were on call 24 hours a day. No one went to town from June 15 until September unless there was an emergency (defined as a death in the family or a toothache). Pat Taylor commented, "I have known some fellows who got off to attend funerals of 6 or 8 grandmothers" (Taylor 1981).

Generally the members of a small backcountry crew would take turns cooking. "It was understood that no one would complain unless he wanted to take over the cooking job," remembered Pat Taylor. If a crew member was a terrible cook, he would haul wood and water and wash dishes instead. Employees were expected to sweep and mop the cabins in which they stayed, in addition to shaving once or twice a week. "It was said that to qualify for a Ranger's job, one must shave every day and be able to spell 'approximately.'" There was an unwritten law that firewood and kindling and a full gas lantern should be left in camps for the next occupant. Employees would work late to finish a job or leave early if done. On cruising or scaling jobs, evening work was done voluntarily to compile cruise notes or to add scale book volumes. No overtime was paid in the 1930s; wages remained the same even if one was on a fire more than 100 hours in one week. In the 1930s seasonal employees took home \$77 a month for a standard work week of 44 hours (five 8-hour days plus Saturday mornings). As a small benefit, seasonal employees were usually allowed to use a Forest Service cabin as headquarters for winter trapping (USDA FS "Early Days" 1976:109; Taylor 1988; Taylor 1981; Owens 1989).

Backcountry crews were also hosts to the public. When anyone rode or walked into camp, the first rule was to inquire if they had eaten and to offer visitors a cup of coffee. The Forest Service employees stayed up until the visitors and their horses were settled (Worf 1989).

The commissary clerk (later known as the dispatcher) answered the phone, cooked for the station, kept employees' work records, and dispatched men to fires. He also ordered the weekly supplies, mowed lawns, took weather measurements, issued gasoline, and did the paper work on timber sales. In 1931 the cook at Tally Lake was required to prepare breakfast and supper for the workers and in between to hike up a steep 3-1/2-mile trail with a fire pack and look for fires

until it was time to cook supper. "In a short time he quit and we 'batched' for several years," recalled Pat Taylor (Taylor 1981; Taylor 1986).

Forest Service Food

In the early years of the Forest Service, employees provided their own food (generally game supplemented with supplies they packed in for themselves). The Forest Service did not supply its employees with food and bedding until 1917. As packers were hired to supply remote ranger stations, employees had to rely on the food brought in by the government or fish and meat that they procured for themselves while in the field (USDA FS "Early Days" 1944:217).

As late as the 1930s some of the backcountry Forest Service food was left over from World War I military rations. These included 5-pound cans of lunch meat "stacked like cordwood" which no one would eat after their first try. Another was evaporated eggs, also unpopular. Other food regularly used in 1930 on the Blackfeet National Forest included smoked ham and slabs of bacon, canned roast beef and salmon, condensed evaporated milk, lard and butter in cans, canned apples and dried fruit, beans, rice, macaroni, corn meal, rolled oats, and tapioca ("To my knowledge no tapioca was ever cooked," commented Pat Taylor). There was no fresh bread, so biscuits known as "Dough Gods" took its place. Pancakes were made from sourdough; the starter was carefully maintained all summer and protected in the mule packs (Taylor 1986; Taylor 1981).

After the coming of the CCCs, Forest Service food improved greatly because the agency learned by observing how the Army supplied food. Fresh meat began to be supplied to permanent camps and fresh bread to all crews. Canned peaches, pears, apricots, pineapple, grapefruit, and even strawberry jam made their appearance (Taylor 1986).

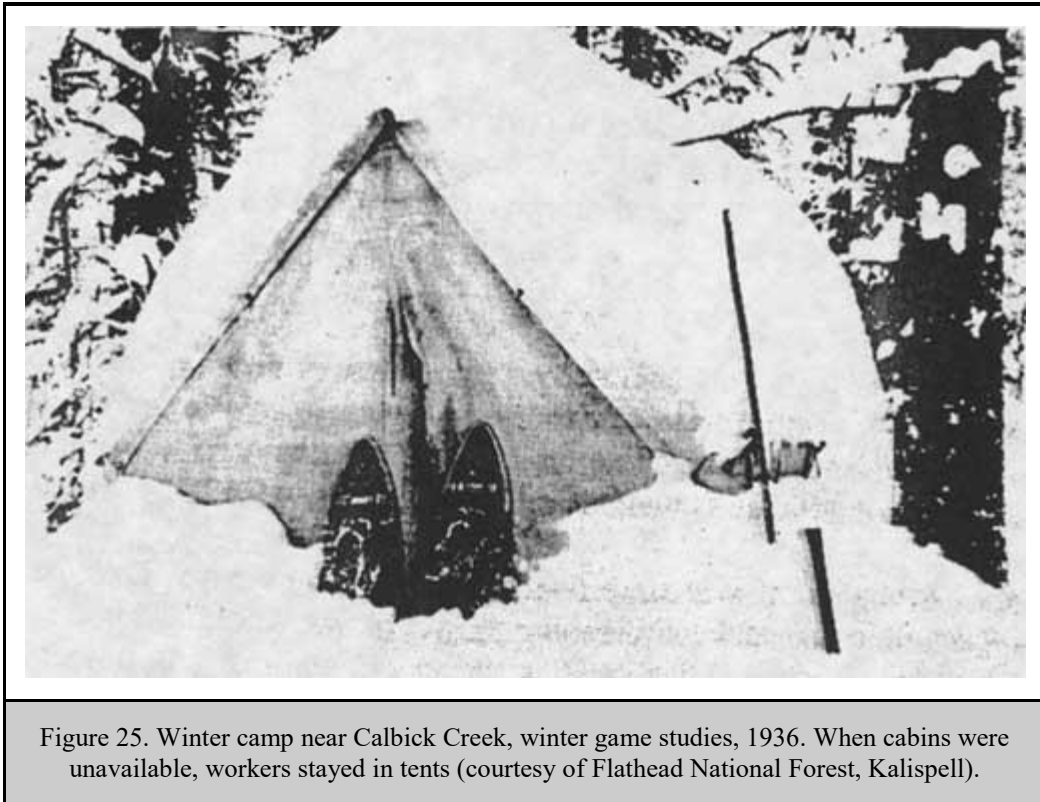
In 1939, typical food for a trail crew included a breakfast of hotcakes with canned ham or bacon, a lunch of a small can of fruit and sandwiches made with baking powder biscuits (carried in a sugar sack tied to the back of the worker's belt), and a supper of baking powder biscuits, canned ham or tin willy (or canned stew), spuds, and a canned vegetable followed by canned fruit. Trail crew workers supplemented their diets with fish caught from nearby streams (USDA FS "Early Days" 1976:110; Montgomery 1982).

Winter Work

Timber cruisers inventorying the forest's timber resources routinely worked in the winters, sometimes in deep snow. R. L. Woesner worked on a timber sale in what is now Glacier National Park some time between 1905 and 1910: "When we left the cabin we always set up a pole in order to be sure to find it when we returned, as we often had to dig down in the snow to find the cabin" (USDA FS "Early Days" 1944:21).

During the winters of the 1920s through the 1940s, the rangers worked out of the Federal Building in Kalispell (247 1st Avenue East). When in the field, they marked timber sales, put up ice, and did game counts and snow surveys. Much of their work was accomplished on snowshoes (see Figure 25). When possible, crews of rangers and a few key men would be transported to the

job site in cars; if not they used a toboggan and later snow cats (the first snow cat was introduced in 1951 (Taylor 1981; Baker et al. 1993:180).



Snow surveys were designed to measure winter snowpack and to forecast spring runoff. They were tried to a limited extent in Montana between 1918 and 1935, then expanded with federal assistance. In 1935 the Corps of Engineers installed 15 snow courses along the Continental Divide, and in the early 1940s more courses were added in the Columbia and Missouri River basins. The earliest snow courses reported in the Flathead National Forest area were established in 1937 on the Flathead River, Logan Creek, and Desert Mountain. Snow surveys were done by one man alone until 1943 or 1944, when two men were sent out together for added safety (Taylor 1981; Monson 1961:5-6, 26).

Pat Taylor described doing snow surveys on the Tally Lake Ranger District, which had three snow courses. He carried a light canvas bag with one shoulder strap that weighed about 10 lbs. It generally took him five days to travel slightly over 90 miles. He commented, "Under good traveling conditions the trips were not too tough. Otherwise they were man killers. I would hit the trail at 5 AM to take advantage of the best snow conditions. Sometimes it was after dark before returning to camp" (Taylor 1988).

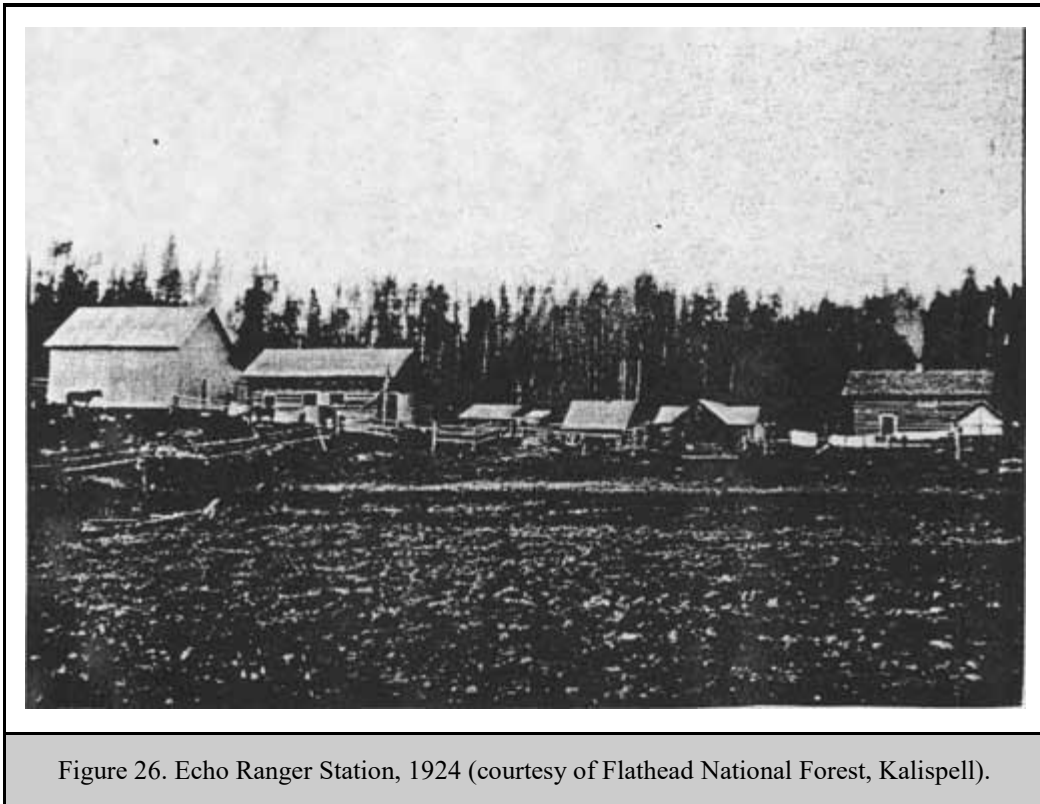
The Forest Service cooperated with Glacier National Park on occasion. One example was a timber survey of the area burned on national park and forest lands by the 1929 Half Moon fire, done during the winter on snowshoes ("Another Emergency Job" 1930:4).

Families

Many rangers living in remote areas had their wives and children with them. For the children, this could be an idyllic life, as they often were allowed to accompany their father on his rounds. Tally Lake ranger Paul Redlingshafer, for example, took his children with him in the early 1920s on trail trips; each child had his own horse to ride (Redlingshafer 1988).

The wives of Forest Service rangers often assisted their husbands for no pay. They helped with a great variety of jobs, including dispatching, surveying, fire fighting, cooking for crews, meeting the public, taking care of office duties, tending the stock, and marking timber stands for sale.

For example, Mary and Ed Thompson were married in 1909 and were stationed at the Echo Ranger Station until he retired in the 1930s. At first they lived in a small cabin in the woods that had been built by a homesteader, but later they added a large log house, barn, blacksmith shop, bunkhouse, outhouse, and other outbuildings (see Figure 26). Mary, like many rangers' wives, raised a vegetable garden, chickens, and pigs and kept a Jersey cow for milk and cream. She served as ranger alternate without pay when her husband was absent. The family shopped in Kalispell, 26 miles away, but in the winter the only way out was by horse-drawn sled. They provided meals to anyone who came to work or visit, and their nearest neighbors (and their mail box) were six miles away (Glazebrook 1980:18-19; 24FH110, FNF CR; Hornby 1932:6-7).



Some forest rangers met their future wives as a result of their duties in the woods. For example, Ray Trueman, ranger at Big Prairie, eventually married a woman named Ruby Kirchbalm who

operated a 30-horse pack string between Coram and Big Prairie after World War I (USDA FS "Early Days" 1962:17; Shaw 1967:27-28).

Injuries

Flathead National Forest rangers and forest guards and other employees have always done much of their work alone in the field in sometimes dangerous situations. Not surprisingly, some have died on the job. The causes of death have included railroad accidents, dynamite blasts, lightning, automobile accidents, heart attacks, falling trees and logs, plane crashes, and even exhaustion from running during a fire. In 1924 the daughter of a man looking after stock wintering at Big Prairie on the South Fork became ill. She died and was buried there before her father was able to snowshoe to Missoula and back for medicine (Shaw 1967:62, 98-99).

In 1930 a smokechaser on Nasukoin Mountain in the North Fork was mauled by a grizzly. In 1928 Ralph Thayer was mauled while locating a trail, also in the North Fork. Both lived to tell their stories (Shaw 1967:117; Yenne 1983:52).

Special-Use Permits

Special-use permits were issued on the Flathead National Forest for such diverse activities as cutting wild hay, growing a garden and flowers along the Middle Fork, building hunting cabins, establishing logging camps, running a commercial packing business, and building summer homes on various lakes (Holland Lake, Lake McDonald, Swan Lake, and others). Dude ranches were also operated under special-use permits. For example, the Diamond R Ranch at Spotted Bear was started in 1927 by Guy Clatterbuck, who had been located the previous year at Spotted Bear Lake. Private hotels were also under special-use permit, such as the Belton Chalet in West Glacier (the Glacier Park Hotel Company was issued a permit for this hotel in 1914) (Opalka 1983; FNF "General Report" 1918)

One spectacular summer home was the Rock House, built in 1930 through a special-use permit on the west shore of Swan Lake for the L. O. Evans family (Evans was president of the board of ACM for a time). In 1937, a forest inspector commented that the management situation at Swan Lake was different from many places because most of the land around the lake was privately owned. He added that wealthy people had moved in over 25 years ago seeking privacy and had "pretty much dominated Swan Lake for 25 years." The ranger tried to protect the public's interest in recreation in the area and at the same time avoid appearing "bureaucratic or spiteful and so retain the good will and cooperation of private owners" ("Rock House" 1984; 18 December 1937 memo, Inspection Reports, Region One, 1937-, RG 95, FRC).

In 1930 the Flathead National Forest maintained 13 residential permits in Essex, which had a population of 200 at the time, of which 90% were railroad employees. In Belton and Essex many of the homes, and the school, were built on federal land under permit (W. I. White, 1/28/30 "Report on Municipal Watershed," 2510 Surveys, Watershed Analyses, 1927-29, RO; Shaw 1967:28).

Forestry Research and Education

The Department of Agriculture offered technical aid and advice to private landowners since 1898. In 1924 Congress passed the Clarke-McNary Act, which among other things provided for federal funds to match state and private funds in supporting cooperative fire protection, distribution of seedlings for reforestation, and other programs. The act also broadened the authorization for the purchase of forest land to permit the government to acquire land for national forests regardless of whether or not it was located on watersheds of navigable rivers. Research in forestry greatly expanded after 1905. The first forest experiment station was established in 1908 in Arizona. The Forest Products Laboratory was established in Madison, Wisconsin, in 1910, and a research branch was created within the Forest Service in 1915 (Gates 1968:595, 597; Winters 1950:14; Randall 1967:62). Forestry education also was becoming more widely available; the Montana State University School of Forestry was established in 1913.

By the early 1920s the Forest Service was encouraging its employees to become involved in public relations and educational efforts. In 1921, for example, the Blackfeet National Forest publicized its work and philosophy through articles in local newspapers, talks to school groups and Boy Scouts, signs and posters in local businesses, and window displays. In 1926, Frank Liebig set up a large display in a big show window of the Kalispell Mercantile that featured all the different kinds of fungi that grow in the forest, plus a variety of fire signs. Another display showed a slice from a Douglas-fir tree that was almost 450 years old, with cards marking the years of historic events, including large fires in the area (*Northern District Bulletin* 5 (May 1921): 34; Liebig, "Flathead Fungi" and "An Historian" 1926: 13, 14).

World Wars

The Forest Service contributed to the World War I war effort in various fields, including those of national defense, military intelligence, and the wood products industry. The mobilization of the war industries led to larger timber harvests and increased road development in Region One, and the prices of labor and construction materials rose. The Forest Service organized and equipped a forestry regiment in the Army Corps of Engineers that was sent to France to log and mill behind the front. Many Flathead Valley residents joined this regiment. During World War I, because the wages in private industry were so high, many Forest Service employees left their jobs to earn more money elsewhere. A few women worked as lookouts during World War I because of labor shortages (Caywood et al. 1991:33-34; Cusick 1981; James 1990:8-9).

Key individuals in the Forest Service were removed to serve in the military during World War II. The total budget of the Forest Service was cut nearly in half in 1943 and 1944 because of the war and because so much money went into the rubber tree plantations in California, part of the Forest Service war effort. The Forest Service faced a manpower shortage as CCC camps were phased out in 1942 and as employees joined the armed forces. In Region One, all road and trail development was stopped except where the government wanted access to strategic metals such as chrome and tungsten. Quite a few lookouts were no longer manned, and the Forest Service hired women to be stationed at some of the others and high school students to work in firefighting, blister rust control, and slash disposal. Before World War II, only 13 women had

been hired as professional foresters, and the CCC did not include women in its program (Gray 1982:187; Caywood et al. 1991:60; Baker et al. 1993:160; James 1990:8-9).

After World War II had focused attention on Forest Service mapping and surveying abilities, the Forest Service was designated one of the standard mapping agencies of the Government. The agency received increased funding and training to produce topographic maps for standard coverage of the United States (see Figure 27) (USDA FS "History of Engineering" 1990:7, 445).



Figure 27. Flathead National Forest surveys, 1960. Fred Kyle, cartographic aid, calls out readings he has obtained from tellurometer. William Markham, cartographic aid, records in notebook (photo by Peyton Moncure, courtesy of USDA Forest Service, Region One, Missoula).

Administrative Sites

Early forest rangers under the GLO either rented buildings or used their own homes as ranger stations. There was no funding in the early years for constructing any administrative buildings in the woods. Soon modest amounts of money were allocated for building and maintaining Forest Service "administrative sites." According to an inspection report, in the year 1906 more cabins and pastures were built and fenced on the Lewis & Clark forest reserve than in all previous years combined (1898-1905). The cabins built then averaged 17' x 26' and generally cost \$200-350 for labor and \$50-75 for materials. All were supplied with a light-weight sheet steel stove (Ise 1920:261; 28 November 1906, "Reports of the Section of Inspection," entry 7, box 4, RG 95, NA).

In 1912 an amendment was passed forbidding the use of homesteaders' cabins as ranger stations. After funds became available, the number of buildings constructed for various purposes on the national forests grew rapidly. In 1939, there were 147 lookout buildings and 247 other buildings on the Flathead National Forest (Figure 28) (Ise 1920:261; FNF, "Informational Report" 1939).

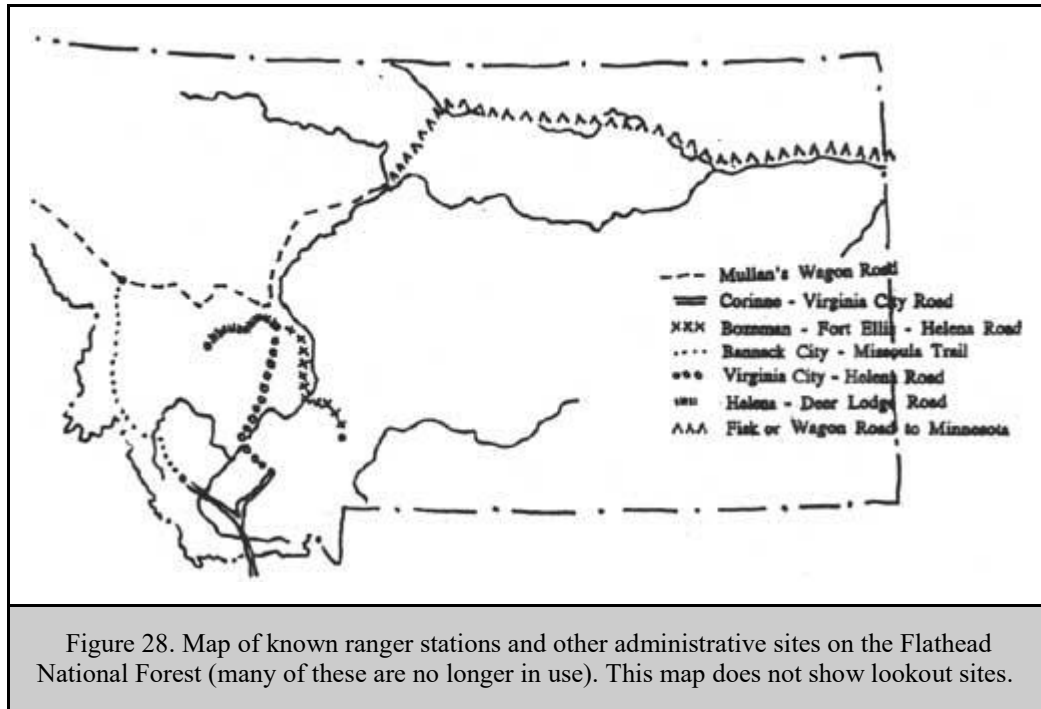


Figure 28. Map of known ranger stations and other administrative sites on the Flathead National Forest (many of these are no longer in use). This map does not show lookout sites.

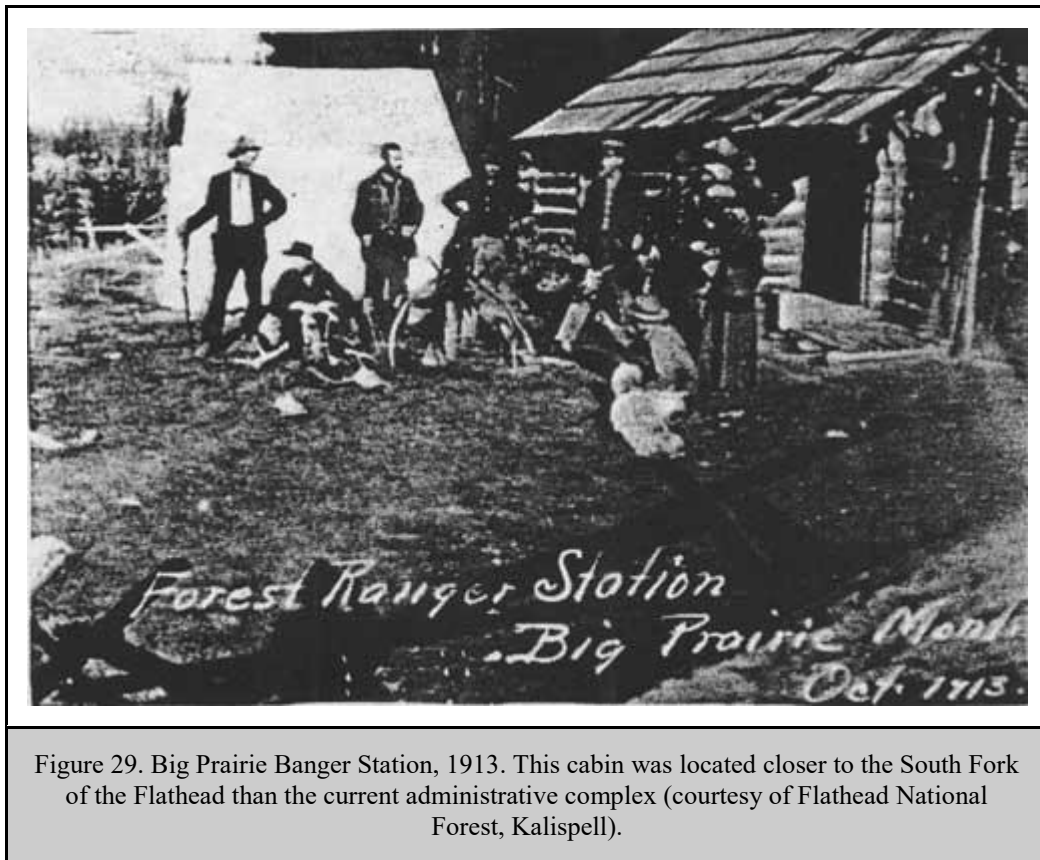
The Forest Service began to "withdraw" plots of land for actual or potential administrative sites soon after the Forest Homestead Act was passed in 1906. The men selecting the sites tried to choose locations that were generally spaced about a one-day's horse ride apart. These withdrawals protected the land from being claimed by a homesteader, a real consideration since the qualities that made a site attractive to a homesteader - water, available pasture, relatively flat land - were also necessary for guard and ranger stations. The sites could not conflict with prior mineral or homesteading claims. Many withdrawals were made before the land had been formally classified; later some of these were once again made available to homesteaders.

Between 1898 and 1918, forest rangers and guards designed and built most of the permanent improvements in the national forests. Because the ranger drew up the plans, these buildings often resembled homestead cabins of the same period. Sometimes their building or re-building attempts were not very successful. In 1922, for example, the regional forest inspector commented that "Buildings on the Blackfeet are surely a worthless lot of shacks." A 1914 act limited the cost of any building for Forest Service use to \$650 without special congressional authority. Flathead National Forest supervisor Page Bunker recommended as early as 1910 that standard types of buildings be adopted for each Forest, but a Region-wide standardized planning effort was not to come until the 1930s (Caywood et al. 1991:67, 69; Flathead 1920-23 Inspection Reports, RG 95, FRC; Kinney 1917:251; "Report of Supervisors' meeting, 3/21-26/1910, 1360 Meetings - Historical - Early Supervisor Meetings, RO:47).

Some of the early ranger stations, and the year of construction of the first building on the site, are listed below. A number were originally the residences of rangers; others were the cabins of homesteaders, prospectors, etc., that the rangers used for a time as headquarters. Most of these early ranger stations were later abandoned or demolished in favor of better locations as the needs of the Forest Service changed (see Figure 29). Some are no longer within the boundaries of the Flathead National Forest since the sites are now in Glacier National Park or the Kootenai National Forest.

1899 head of Swan Lake
1902 Cedar Creek near foot of Lake McDonald
1902 Coram
1904 Big Prairie
1905 Hahn Creek
1905 Riverside (South Fork)
1906 Black Bear (burned in 1910)
1906 Spotted Bear Lake
1906 Danaher
1908 Star Meadow
1908 Swan Lake
1908 Tally Lake
1909 Bear Dance
1909 Holland Lake
1909 Hungry Horse
1910 Belton
1910 Three Forks

(Shaw 1967:7, 49; FNF "General Report" 1918; Wolff 1980:53; site files, FNF CR; Blake 1936:1; Mitchell 1973).



Many administrative sites that were withdrawn were never actually used for anything more permanent than as summer camping and pasture grounds for forest employees passing through the area. These were strategically located at trail junctions with sources of water and good pasture. Some were withheld specifically to prevent speculation by private parties, such as the River Side Administrative Site selected in 1912, located about 10-12 miles above Henshaw Ford at "the most natural crossing on the North Fork" (FNF "General Report" 1918).

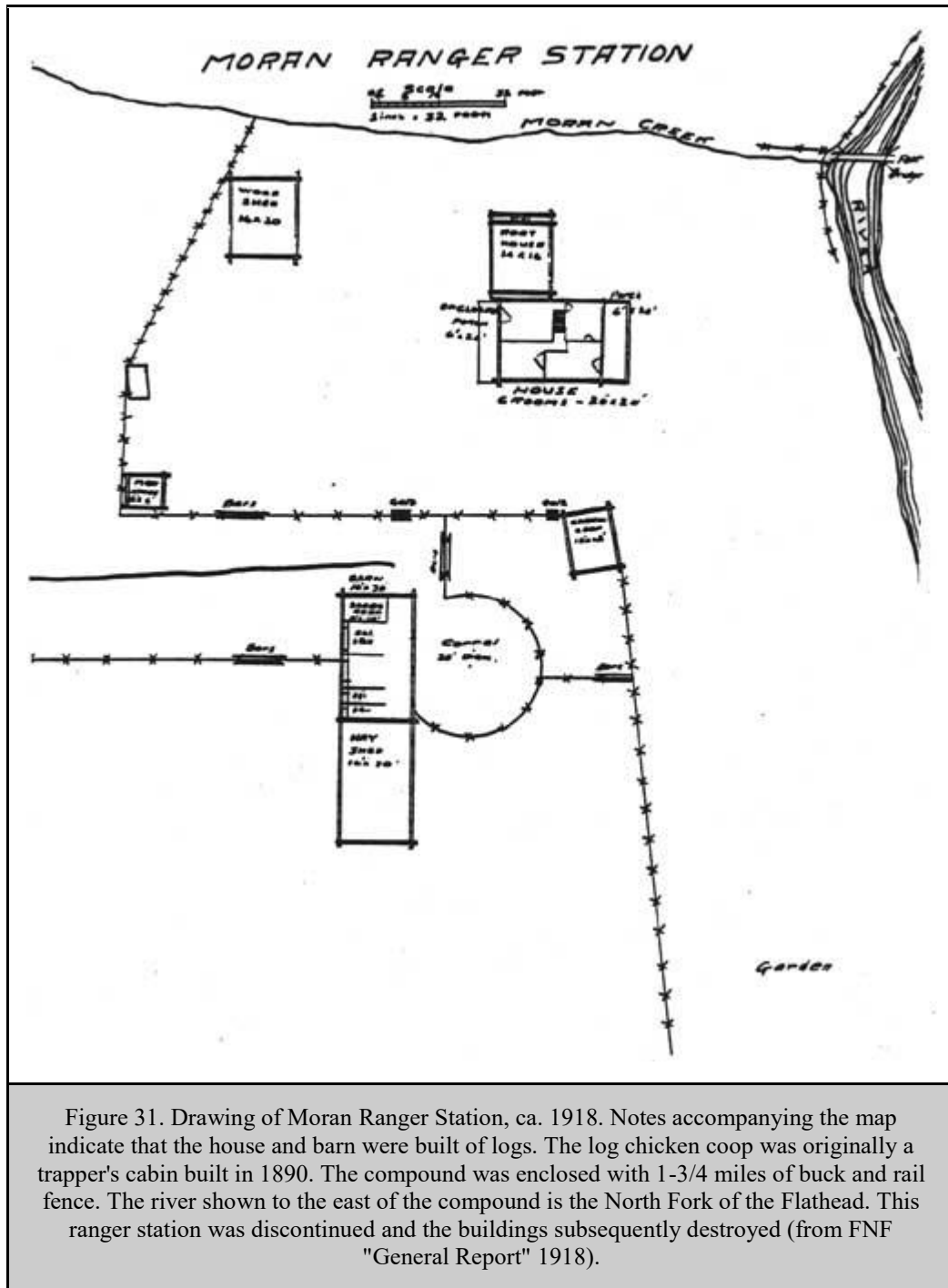
An administrative site was withdrawn in the Belton (West Glacier) area partly in order to "bring the greatest competition against the monopoly of the Belton Mercantile Company," which owned all the land within 1/4 mile of the railroad depot except for the Forest Service site. A seasonal employee lived in a house hidden behind a steep hill because the Forest Service felt the agency did not have enough funding to build a station along the road "that would conform in architecture to the Great Northern Chalets" and that the traffic on the road (which did not yet go over Marias Pass) did not warrant such an expense (FNF "General Report" 1918).

The Coram Bridge Station, located at the village of Coram along the railroad tracks, was withdrawn as a banking ground for timber. In 1913 a cabin and storehouse were built to store government supplies loaded at that site. The Forest Service also administered special-use permits at this location in the 1910s for three stores, a barber shop, and a residence (FNF "General Report" 1918). South of Coram, along the South Fork, was the Elk Park administrative site, also known as the "Elk Park packers' camp" (see Figure 30).



Figure 30. Elk Park packers' camp on the South Fork, 1924 (the site was flooded by the creation of the Hungry Horse Reservoir). The log building, wall tents, pack stock, and location near water are typical of Flathead National Forest administrative sites (courtesy of Flathead National Forest, Kalispell).

Initially, the Use Books required that Forest Service cabins be built of logs whenever possible, with shingle or shake roofs. In the early 1900s the authority for planning construction on the Forests shifted from the inspectors to the Forest, with the Regional Office playing an oversight and technical advisory role. Clyde Fickes of the Regional Office recommended that in choosing a location for a building site, the following factors should be considered: sunlight, drainage, background, fuel, pasture, and water supply (see Figure 31) (Caywood et al. 1991:26-27; Fickes 1935).



From 1918 until 1928 the Forest Supervisor usually reviewed the building's design and placement. The architectural style continued to be similar to that of local vernacular buildings. In the 1920s and 1930s, buildings that were near supply points generally were built in the bungalow style with Craftsman features such as exposed rafter tails, dormers, and roof brackets. These were of Forest Service design or followed a generally available pattern-book plan. In general, Forest Service buildings were utilitarian, "rustic" in appearance, and reflected local designs and materials (Caywood et al. 1991:73, 95).

Clyde Fickes of the Regional Office prepared a handbook in 1935 giving plans and instructions for standard Forest Service buildings and structures. He personally preferred "chopper cut" (irregular) log ends; he felt this end finish imitated early log construction techniques. This style is not present on earlier Forest Service log buildings but is found often on buildings dating from the 1930s and later (Caywood et al. 1991:99).

The Forest Service took great pride in its buildings, even in details such as paint trim. In the 1930s the agency increasingly encouraged uniformity in its buildings, and by the mid-1930s standardized plans were provided for virtually every building project in the region. Natural settings and native materials were preferred, such as log, wood shakes, and native stone (Caywood et al. 1991:55-56, 66).

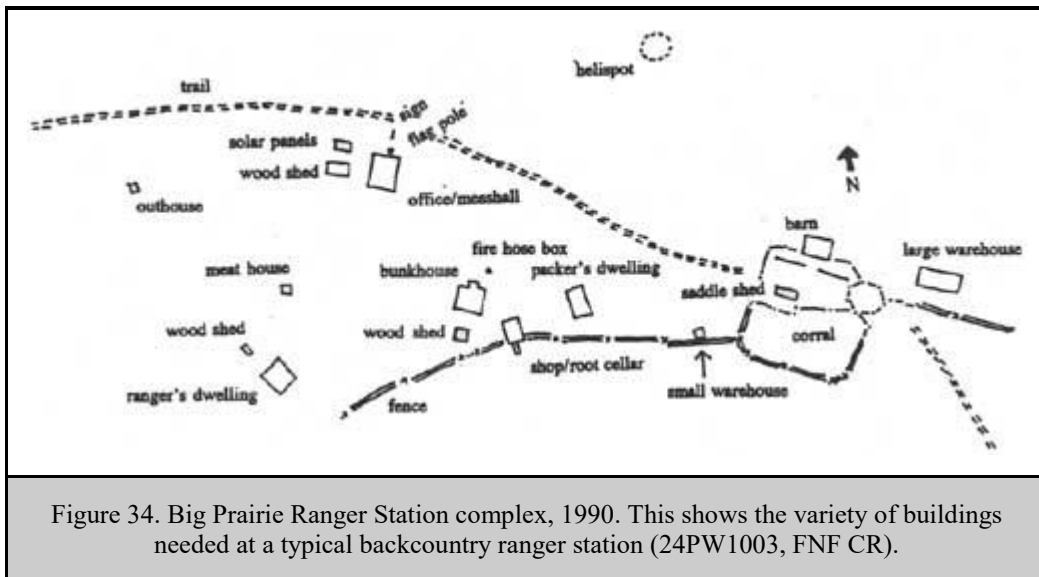
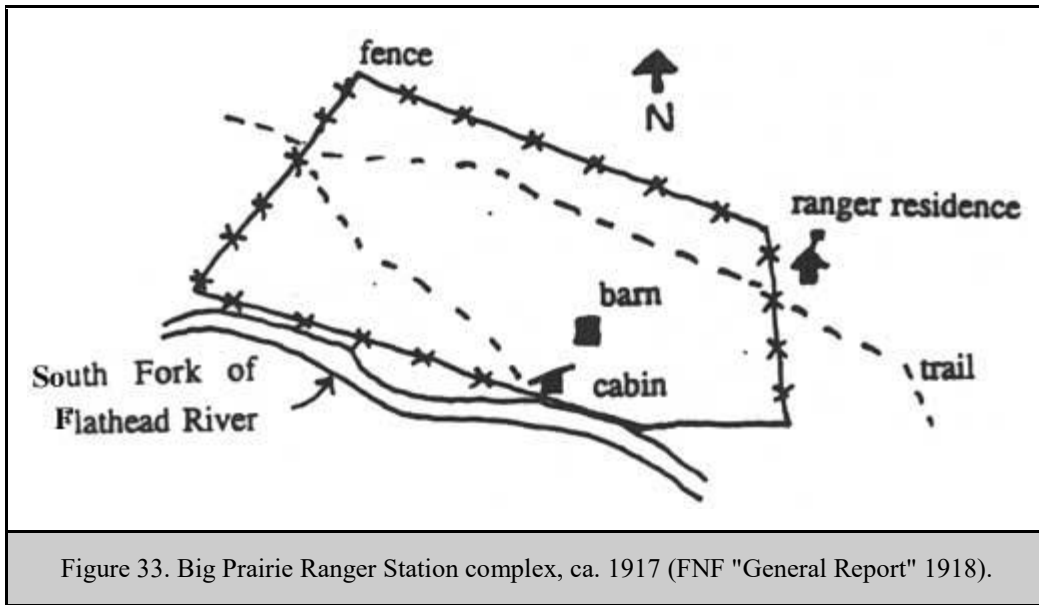
Log construction of Forest Service administrative buildings was typical in the more remote areas. The "Rocky Mountain" style log cabin is the style common to many Flathead National Forest backcountry pre-World War II buildings, and it was predominant throughout Region One. This style of log cabin features an off-center door in the front wall, an extended porch gable that forms a sleeping loft, and compound dovetail notches. Flathead National Forest buildings with this standardized Region One plan include Basin, Gooseberry Park, Pentagon, Shaw Station, Hahn, Challenge, and Ninko Cabins. Most of the buildings of this style in Region One date from 1928-34, but some on the Flathead are later (Wilson, Mary 1984:1, 34; Caywood et al. 1991:74, 77-79).

Some of the early Flathead National Forest employees were extremely skilled in log construction. One of these was Vic Holmlund, who immigrated to the United States from Sweden in 1875. He came to the Flathead Valley with a Great Northern Railway construction crew as a "tie hack" (hewer of railroad ties). "Big Vic" (he was almost 6' 6" tall) was a master at hand hewing logs and creating compound dovetail notched corners. He worked the summers of 1924-27 and 1929-34 for the Flathead National Forest building fire lookouts and ranger stations. Another skilled hewer of compound dovetail notching was Everett M. Hart, who worked for the Forest Service from 1913-26, sometimes with Big Vic (see Figure 32). The log construction technique of "scribing" was introduced in the late 1920s. This technique could be taught relatively easily to inexperienced builders and produced tight-fitting ventral saddle notches. Earlier buildings generally had square, V, double saddle, or dovetail notches (Green 1969:1, 15-17; personnel files, FNF CR; 24FH20, 24FH428, FNF CR; Caywood et al. 1991:78, 82).



Figure 32. Garage/blacksmith shop under construction at Spotted Bear Ranger Station, 1925. Master log carpenters Vic Holmlund and Everett Hart probably helped build these buildings, which are currently known as the fire cache and the old office (photo by Everett Hart, courtesy of Flathead National Forest, Kalispell).

An excellent example of a typical backcountry Forest Service administrative complex is the Big Prairie Work Center (formerly the Big Prairie Ranger Station), located along the South Fork (now within the Bob Marshall Wilderness). In 1937 a forest inspector described Big Prairie as "delightful - so delightful that it cannot be forgotten." At that time the buildings at the complex included a "nice log cabin" ranger dwelling, a combination office/kitchen/dining room and warehouse, a bunkhouse, and a blacksmith shop (see Figures 33 and 34). The Big Prairie airfield was completed in 1931 (27 December 1937 memo, Inspection Reports, Region One, 1937-, RG 95, FRC; "History of the Use of Aircrafts," n.d., FNF CR).



In 1918 the Flathead National Forest (south half) had ten ranger districts: Echo, Lower Swan, Upper Swan, Upper South Fork, Spotted Bear, Lower South Fork, Coram, Belton, Essex, and Big River (now called Middle Fork). These varied in size from 46,200 acres (Coram) to 547,800 acres (Upper South Fork). In 1918, Echo, Lower Swan, Coram, Belton, and Essex were year-round ranger stations. The other stations were "chiefly protective" in purpose and so were not manned during the winters. All but two of the stations were connected to the Forest Service phone system; from Belton and Essex the rangers had to use the Western Union telegraph system to get messages in and out. The latter two stations were the only ones at which the ranger and the government did not have horses; the railroad was the main means of transportation instead (FNF "General Report" 1918).

By 1923 Flathead National Forest supplies were coming in from Central Purchase and being checked out to camps. Beginning in approximately 1928, supplies, materials, and equipment were shipped direct from the Spokane Warehouse to the site where they were to be used. The Flathead National Forest in 1938 was one of the few forests that still ordered in bulk, shipped to Kalispell, and then distributed on order to the field rather than having orders shipped directly from Spokane (7 April 1924 memo, Flathead 1920-23 Inspection Reports. RG 95, FRC; 13 September 1938, Flathead Inspection Reports Region On, RG 95, FRC).

The abandonment of isolated sites close to the field and their replacement by centrally located district headquarters is typical of Forest Service development during the 1930s. This centralizing trend depended on the expansion of the Forest Service road system, which improved access to work areas. The administrative sites that are still in use today in the backcountry were generally established after World War I.

In 1905 Flathead National Forest headquarters were moved from Ovando to a room in the Conrad Bank building in Kalispell. When the Federal Building was constructed in Kalispell in 1917, both the Flathead and the Blackfoot National Forests had their supervisor's offices on the second floor (the first floor was devoted to the post office). This building now houses the Flathead County Library and School District 5 offices. Some years additional space was rented in Kalispell. For example, for two winters in the 1930s the engineering crew was located in offices over Jack's Tavern and in the Eagles Hall on 1st Avenue West in Kalispell (Shaw 1967:5; Helseth 1981).

Boundaries

The boundaries of what is now the Flathead National Forest have changed greatly over the years since 1898. When the forest reserve was originally mapped, its boundaries were drawn roughly, tending to follow section lines, because there was not enough funding for ground surveys. The 1898 boundaries were quite different than those of today, extending east of the Rockies but not including much of the area now part of the Tally Lake Ranger District. A few years after the forest reserves were proclaimed in 1897, foresters began surveying and reviewing the lands. As a result, some lands were excluded from the forest reserves because they turned out to be submarginal in timber growth potential or else agricultural in nature (Pinchot 1907:8).

On June 9, 1903, the area bordering the Great Northern Railway along the Middle Fork was added to the Flathead National Forest by presidential proclamation. In 1903 the Flathead and the Lewis & Clarke forest reserves were consolidated into one reserve, the Lewis & Clark, but they were separated again in 1908 and re-named the Blackfoot and the Flathead National Forests (see chart of all the names of the Forest at the end of the Introduction). The Kootenai National Forest was designated in 1906. Four years later, the land in the eastern part of the Blackfoot National Forest was transferred to establish Glacier National Park. The Blackfoot National Forest was then consolidated with the Flathead and the Kootenai National Forests in 1933 (62% of its land was subsequently administered by the Flathead). When the Blackfoot National Forest was combined with the Flathead, making it almost 2.6 million acres, a Forest Service publication commented, "If there is a National Forest area of similar size in the United States, under one Supervisor's jurisdiction, with more deep-downs and higher-ups and more units of inaccessibility, it has never

yet been discovered" ("Establishment and Modification" 1973: *passim*; "Blackfeet Forest Reports" 1934:8).

For several years prior to 1923 the Spotted Bear and White River areas were administered by the Lewis & Clark National Forest, but in 1924 they were turned back to the Flathead. The Island Unit (formerly referred to as the "Floater") was managed by either the Blackfeet National Forest or the Flathead National Forest until 1918, when it was transferred to the Flathead National Forest (15 December 1923, Flathead 1920-23 Inspection Reports, RG 95, FRC; 1918 Presidential Proclamation, 3 June 1918; FNF Lands). All forest reserves around the country were called national forests beginning in 1907, and in that year the spelling of "Clarke" was changed to "Clark."

The General Exchange Act of 1922 gave the Forest Service authority to exchange nonmineral national forest land or timber for private or state-owned lands of equal value within the forest. This act was critical for the consolidation of Forest Service ownership. The basis of the exchange was equal value, not equal area. During the Depression, many companies such as the ACM had large holdings of cutover lands on which they were paying taxes but earning no income. Some donated these lands to the Forest Service, adding to the Forests or to primitive areas. This federal acquisition of cutover timber land was thought to help the lumber industry by stabilizing land ownership and promoting reforestation (Steen 1976:147; W. Robbins 1982:208).

Private landowners within the national forests could essentially sell their land to the Forest Service; under the 1922 act they obtained cash for their land by collecting the revenue earned from Forest Service timber sales elsewhere. The timber sale and the land to be exchanged did not have to be on the same Forest. For example, in 1927 the receipts from a timber sale on the Blackfeet National Forest were used to pay for land that the Kootenai National Forest obtained under the land exchange act (Baker et al. 1993:123; FNF Lands).

Companies based in the Flathead Valley that donated land to the Flathead National Forest via land exchanges included the Empire Lumber Company of Kila and the Brooks-Scanlon Lumber Company of Eureka. In 1939 the F. H. Stoltze Land and Lumber Company donated about 10 acres of land to the Flathead National Forest for the site of the Whitefish Lookout. In 1935 the J. Neils Lumber Company of Libby exchanged over 8,000 acres for timber (cash) (1928 report, Flathead Inspection Reports Region One, 1928 report, RG 95, FRC; FNF Lands).

When Montana became a state in 1889, the Constitution granted it approximately 5,100,000 acres, consisting of sections 16 and 36 in each township. Those sections with timber on them provided the base for the state forest system. By 1916 Montana had a permanent official board of forestry. Since much of the land granted to the State was within national forest boundaries, a trade was arranged whereby the state would receive blocks of commercially valuable national forest land, or public grasslands in eastern Montana, in exchange for state-owned timber lands within national forests (Kinney 1917:217; Burnett 1982:11, 13; Cusick 1986:10).

In 1918 President Wilson conveyed the land for the Stillwater and Swan River state forests to Montana. The land was selected in lieu of unsurveyed school land sections within national forests. In 1925 the Stillwater, Swan River, and Coal Creek state forests were designated and

mapped. Reportedly, the state forester had planned a second land exchange to include the Sunday Creek, LaBeau Creek, and Good Creek drainages to increase the acreage of the Stillwater State Forest to approximately 200,000 acres, but after he left office the land exchange was no longer considered (Moon 1991:66; Conrad 1964:29; Cusick 1986: 10).

The large block of private land that still exists within the Stillwater State Forest was reportedly created as a result of a "land steal," revealing the power at the turn of the century of the major lumber companies in the area. Some time before 1907 the State Land Board authorized the sale of nearly 50,000 acres of timberland (averaging 10,000 board feet per acre) that the state had selected in that area. The sale required a large deposit (eliminating small operators), and it went to three large lumber companies for \$14 an acre. The deal was reportedly engineered by the Northwestern Lumber Company of Kalispell, and the state lost millions of dollars in the sale (Moon 1991:22-23).

Only rarely did the threat of lawsuits or violence occur in relation to land exchanges, but such an event did take place in Belton in 1909. Section 36, bordering Belton on the south, was claimed by both the state and the Forest Service, the latter because the land had not been surveyed for the state when the forest reserve was created in 1897. In 1909 the state sold 40 acres of the section to the Great Northern Railway as a chalet site. Flathead National Forest supervisor Page Bunker sent ranger Jack Clack and a crew to Belton to fence the area and station a fire guard there as evidence of the federal government's claim to ownership. For one day Clack hastily prepared to defend the 40 acres against the state militia expected to arrive on the Great Northern. The anticipated troops did not arrive, and later a federal court decided in favor of the Forest Service (USDA FS "Early Days" 1944:3-4).

Northern Pacific Railroad

When the territory of Montana was created in 1864, the federal government granted the Northern Pacific Railroad approximately 13 million acres of land in Montana. This vast amount of land included every other section in a strip 80 miles wide along its line, plus lieu selection privileges within 10 miles of the outer limit of the original grant. This huge land grant led to the checkerboard ownership pattern still evident in the Swan Valley and other areas. Some 69,000 acres of NPRR sections lay within what is now known as the Bob Marshall Wilderness. The NPRR made lieu selections within the adjacent indemnity limits to make up for land already claimed for homesteads, mining, Native American reservations, and so on (later Congress authorized the railroad to acquire lands beyond even those boundaries). By 1927 the NPRR had sold over 35 million of the 39 million acres it had been granted, but it had not yet sold or traded the land within the Flathead National Forest (Conrad 1964:26; Merriam 1966:18; Schwinden 1950:90, 121; Cotroneo 1966:147).

In 1922, a party of NPRR and Forest Service representatives traveled together into the previously unexplored eastern slopes of the Mission Mountains. When the Mission Mountains Primitive Area was established in 1931, 30% of the land was still owned by the railroad. In the late 1940s and early 1950s the NPRR traded most of its land holdings at higher elevations inside the primitive area boundaries for Forest Service lands elsewhere in the Swan Valley. By 1963, all

but 2,800 acres of NPRR lands in the Missions had been traded, and by the early 1970s all of the NPRR lands in the Missions had been exchanged (Wright 1966:16-17; FNF "Guide" 1980).

In general, the NPRR managed its lands to maximize profits for company stockholders. Some of the land was managed for recreation, however, including the leasing of summer home sites on Holland Creek (this program was started in the early 1960s) (Wright 1966:59-60).

Glacier National Park

By the early 1900s a schism had developed within the American conservation movement. Conservationists such as Gifford Pinchot favored the utilization of natural resources on forest reserves and the opening of national parks to grazing, timber harvest, and general development. Preservationists such as John Muir and George Bird Grinnell, on the other hand, favored maintaining national parks in a natural state, preserved for their beauty, recreation possibilities, and scientific potential (Buchholtz 1969:3).

On the local level, as early as 1906 the *Inter Lake* of Kalispell was warning its readers to keep an eye on the movement to create a national park out of a portion of the forest reserve and to "be ready to get in an emphatic protest" (*Daily Inter Lake* 7 September 1906). Some Kalispell residents and a few politicians did oppose the creation of Glacier National Park. Kalispell attorney Sidney Logan objected to the park proposal because of the anticipated regulations. He wrote Senator Carter:

While the name "National Park" may have an alluring sound to the observation car tourist, the words "public domain" ring sweeter to the ears of the average Montanan... [who] loves to commune with nature unhampered and unwatched. The sight of cotton bed sheet nailed to a tree and covered with regulations telling him what will happen [to] him if he does not toe the mark, is exceedingly obnoxious and detracts from his enjoyment of the scenery ("Protests" 1907).

But many would have agreed with Senator Dixon of Montana, who approved of creating Glacier National Park because it was "an area of about 1,400 square miles of mountains piled on top of each other...Nothing is taken from anyone" (quoted in Oppedahl 1976:48).

The act creating Glacier National Park in 1910 reflected this division. Timber harvests for revenue, the hunting of predators, existing homesteads, one-acre plots for private summer homes, railroads, and existing reclamation projects - all were allowed in the newly designated Park. The first superintendent's job was to convert the forest reserve into a park that was more accessible to the public (Buchholtz 1969:4).

Fremont N. Haines, supervisor of the Blackfeet National Forest, remained as acting superintendent of Glacier National Park until August 5, 1910. He and the first Park superintendent William Logan spent almost all their time dealing with the 1910 fires that burned through the Forests and Park that summer. The next year the Forest Service moved its offices from the Indian (Akokala) Creek Ranger Station, located within the new Park, to the west side of

the river, where Blackfeet National Forest employees and various homesteaders built a new ranger station on Moran Creek (Buchholtz 1969:5; USDA FS "Early Days" 1976:140).

Waterton Lakes National Park was created just across the border in Canada in 1911 out of the Kootenai Lakes Forest Reserve. In 1932 the Waterton-Glacier International Peace Park was dedicated.

Glacier View and Other Proposed Dams

Since 1899 Congress has had the right to authorize the damming of navigable streams, primarily for flood control. In approximately 1920 the Regional Forester proposed several power sites along the Flathead River as part of a Forest Service effort to attract the pulp and paper industry to the area. The proposed dam sites were on the Flathead River near the confluence of the South Fork, on the North Fork not far north of the Forest Service boundary, at the outlet of Swan Lake, and at the outlet of Flathead Lake (Winters 1950:13; USDA FS "Possibilities" ca. 1920:10-11).

In 1942 a proposal to raise Flathead Lake by several feet to increase the capacity of the Polson power plant led to a storm of public protest. Preliminary surveys were then made of various dam sites in the North Fork. In the mid-1940s test drilling was carried on at Fool Hen Hill and at Glacier View Mountain. As early as 1943 the Army Corps of Engineers began talking about a proposed dam called the Glacier View Dam to be used for both flood control and power generation. The dam would have been located just north of the Big Creek Ranger Station on the North Fork of the Flathead River. The reservoir would have flooded thousands of acres of Glacier National Park and of the Flathead National Forest (see Figure 35) (Robinson & Bowers 1960:100; Buchholtz 1976a:71).

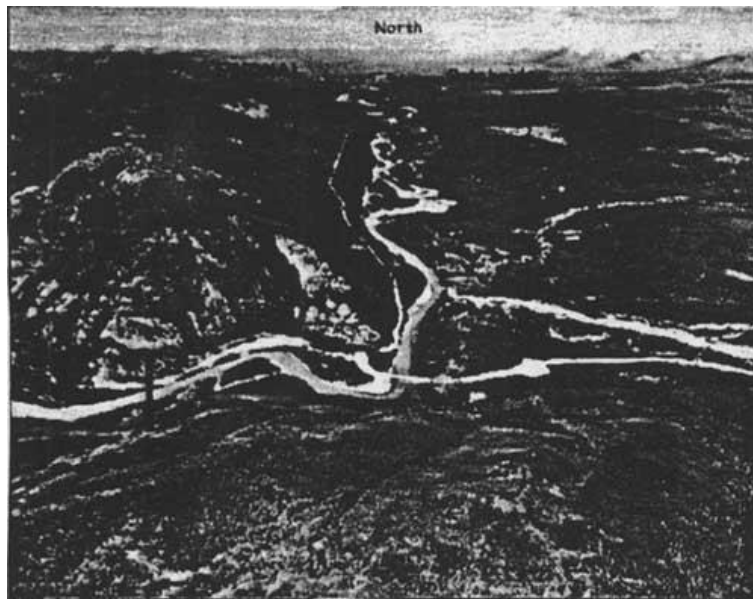


Figure 35. Location of proposed Glacier View dam and reservoir (courtesy of Flathead National Forest, Columbia Falls).

In 1948 the proposed Glacier View Dam received national attention as a result of public hearings in Kalispell. Most of the testimony was against the dam, including that of the National Park Service and major conservation groups. North Fork residents opposed being "drowned out," many people did not want to see so much of the Park flooded, and others talked about the destruction of wildlife habitat. Some people argued that reforestation of cut-over and burned areas would be a better way to help with flood control and that the reservoir would increase the problems of fire protection. Some Kalispell groups, however, supported the dam because of anticipated economic benefits. It was agreed to set the project aside until studies indicated that it was needed by the nation and that there were no feasible substitutes (Glacier National Park, "The Glacier View Dam Project" 1955:1; Atwood 1949:15-16, 18; "Proposed Glacier View Dam" 1948).

In 1949, the North Fork Ranger District of the Flathead National Forest was renamed the Glacier View Ranger District. This was due to the confusion caused by the existence of the similarly named North Fork Ranger Station in Glacier National Park, and to the local and national recognition of the name Glacier View due to the proposed Glacier View Dam (Fred Neitzling to Forest officers, 11 March 1949, GVRD).

After the public debate in 1948, the Army Corps continued to advocate other North Fork sites that would flood less Park land. The National Park Service built Camas Creek Road through the area to show its recreational intentions in the disputed area. In 1949 Senator Mike Mansfield tried to revive the Glacier View dam project, saying it "would not affect the beauty of the park in any way but would make it more beautiful by creating a large lake over ground that...has no scenic attraction" (Buchholtz 1976a:71; Oppedahl 1976:120).

Two other proposed dam sites were the Smoky Range Dam, which would have been located five miles south of the Big Creek Ranger Station, and the Canyon Creek Dam, about 6 miles south of Big Creek, both on the North Fork of the Flathead River. The Spruce Park dam site was located about 6 miles upstream from the confluence of the Middle Fork and Bear Creek. Proposed in 1957, the Bureau of Reclamation planned to connect it via a transmountain tunnel to a generating plant on the bank of the Hungry Horse Reservoir near Hoke Creek (see Figure 36). The dam, if built, would have required the clearing of about 3,000 acres. By about 1960 the Spruce Park Dam was low priority, and it was never built (FNF, "Timber Management, Glacier View" 1959:23; Burk 1977:107; FNF "Timber Management, Coram" 1961:17).

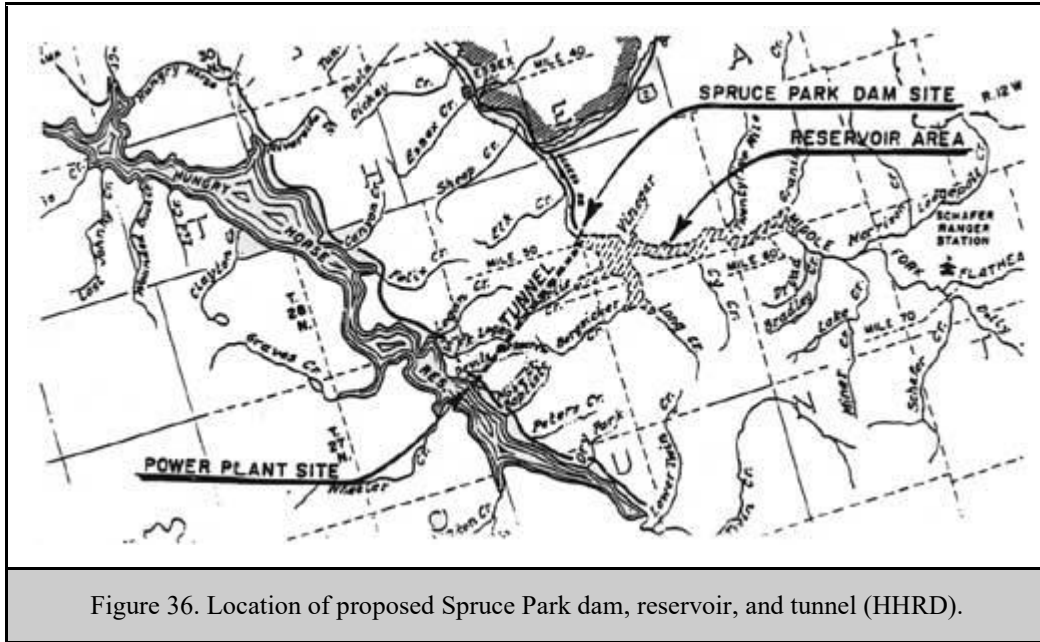


Figure 36. Location of proposed Spruce Park dam, reservoir, and tunnel (HHRD).

Hungry Horse Dam

The completion of the Hungry Horse Dam on the South Fork in 1953 - and the related completion of the Anaconda Aluminum Plant two years later - had significant impacts on the Flathead Valley. Proposals for a dam at that location had been discussed for several decades before it was actually built.

The power development possibilities in the South Fork were investigated as early as 1910, and the site for a dam on the South Fork 5 miles upstream from the mouth of the river had been selected by 1924. The final survey and report for the Hungry Horse Dam project was completed by the Army Corps of Engineers in approximately 1941. In 1944 Congress authorized the construction of the dam, and planning for the dam began at the end of 1945 under the direction of the Bureau of Reclamation. The stated purpose of the dam was stabilization of river flow for greater power development throughout the Columbia River Basin. The reservoir flooded approximately 22,500 acres of land, all of it on the Flathead National Forest (Jones 1924:96; USDA FS "A Study" 1948).

Logging the 37 square miles of reservoir yielded about 90 million board feet of saw timber, plus utility poles, pulp, railroad ties, and fuelwood in the flowage area. Contractors were required to remove all trees that were larger than 1" in diameter and 5' above the ground and to leave no stumps more than 2' high. To clear the flowage area, contractors experimented with five 8'-diameter steel balls supporting steel cables and pulled by pairs of diesel tractors. This "highball" clearing method, developed in 1949, snapped and uprooted trees as large as 4' in diameter. The method was not as successful as had been hoped, however, and eventually the logging contractors returned to standard methods. The trees that were felled during the clearing for the reservoir were skidded to a mill at the site, and some of the lumber was used in building houses for Bureau of Reclamation employees (USDA FS "A Study" 1948; Merriam 1966:67; Shaw

1967:136; "Contractors High-Ball" 1950:14-15; W. Elwood 1994; *Kalispell News*, 18 March 1948).

The Hungry Horse Dam, completed in November of 1953, is 564' high. It backs up water as far as 34 miles away, with a maximum depth of 500'. In addition to generating electricity, it regulates the flow of the South Fork and aids in flood control (Montana Conservation Council 1954:33-34). It also increases the production capacities of the Kerr and Thompson Falls power plants and others downstream on the Columbia River Basin system.

As mitigation for the flooding of Forest Service administrative sites, the Flathead National Forest requested that the Bureau of Reclamation replace the four work centers within the flowage area with two identical work centers (Betty Creek and Anna Creek), one on each side of the reservoir; reestablish pasture; relocate phone lines; replace Riverside Lookout and its communication facilities with a lookout on Firefighter Mountain; and replace the road along the South Fork River with a road on each side of the reservoir. After the dam was completed, the Forest Service obtained the Bureau of Reclamation buildings to use for administration and housing, including 13 dwellings, a dorm, a conference hall, a cement-testing lab, and the building that is now the Hungry Horse Ranger District office (USDA FS "A Study" 1948; Shaw 1967:137, 139).

The ACM decided to build an aluminum plant just outside of Columbia Falls in order to obtain favorable electric rates. The company obtained contracts for large blocks of power from the Bonneville Power Administration, and construction of the aluminum plant began in 1953. The plant converts alumina into primary aluminum by an electrolytic process in pot rooms (Springer 1976:51-52; Montana Conservation Council 1954:40). The aluminum plant employs hundreds of people and has had a major effect on settlement patterns and the economy of the upper Flathead Valley.

TRANSPORTATION

Introduction

Travel along the western slopes of the northern Rockies was quite difficult and time-consuming until recent years. Dense forests, steep slopes, and extreme weather conditions prevented easy travel. The earliest travel routes through northwestern Montana were trails developed by Native Americans. By the 1880s, a handful of wagon roads had been built in the Flathead, and soon a few ferries and bridges, plus steamboats on Flathead Lake, improved the transportation network. The coming of the Great Northern Railway to the valley in 1891 offered greatly improved access to points along the line. By the 1920s, there was political pressure and funding available for improved roads for automobile use.

The Flathead National Forest continued to rely heavily on the use of pack animals and trails after the introduction of automobiles in the early 1900s because so much of its land was otherwise inaccessible. The Forest was one of the earliest to use airplanes regularly, because of its unusually large backcountry. Many Forest Service workers helped with trail construction and maintenance, and each ranger district employed packers to move supplies by horses or mules where needed. After World War II, however, the Forest Service began receiving funding to build roads, many of them designed for accessing timber-sale areas and some designed also with recreational use in mind. As the mileage of roads on the Flathead National Forest grew, the mileage of maintained trails dropped significantly.

Early Flathead National Forest trails that are no longer maintained can often still be followed through the woods, with the help of the worn tread and occasional blazes. Some of the early roads have been blocked off, but these can still be easily followed on the ground.

Early Trails

Native Americans traveled through the mountains by conforming to the natural routes of travel. If time, distance, and elevation changes were not determining factors, they followed high, open ridges, the edges of high river terraces, or game trails. Many trails regularly used by the Kootenai in the Flathead Valley originated near the mouth of Ashley Creek (a few miles southeast of today's Kalispell). Native American trails in the area did not receive a great deal of use in the 1800s because their population was not very high. The number of Kootenai in both divisions and all bands was probably about 1,000 in 1800, just before Euroamericans came into the area (Fredlund 1971:43; Braunberger & White 1964:57; Smith 1984:55).

In the 1800s the Salish and Kootenai traversed the Flathead area on their semi-annual bison-hunting expeditions, until the buffalo were nearly exterminated. They traveled both on horses and unmounted, and in the winter they traveled on snowshoes. Plains groups, particularly the Blackfeet, crossed from east to west to raid for horses. All groups also made trips into the mountains for hunting, fishing, and gathering (Fredlund 1971:43; Malouf 1952:46). They favored camping areas such as Schafer Meadow and Gooseberry Park that provided both horse feed and game to hunt (see Figure 37).

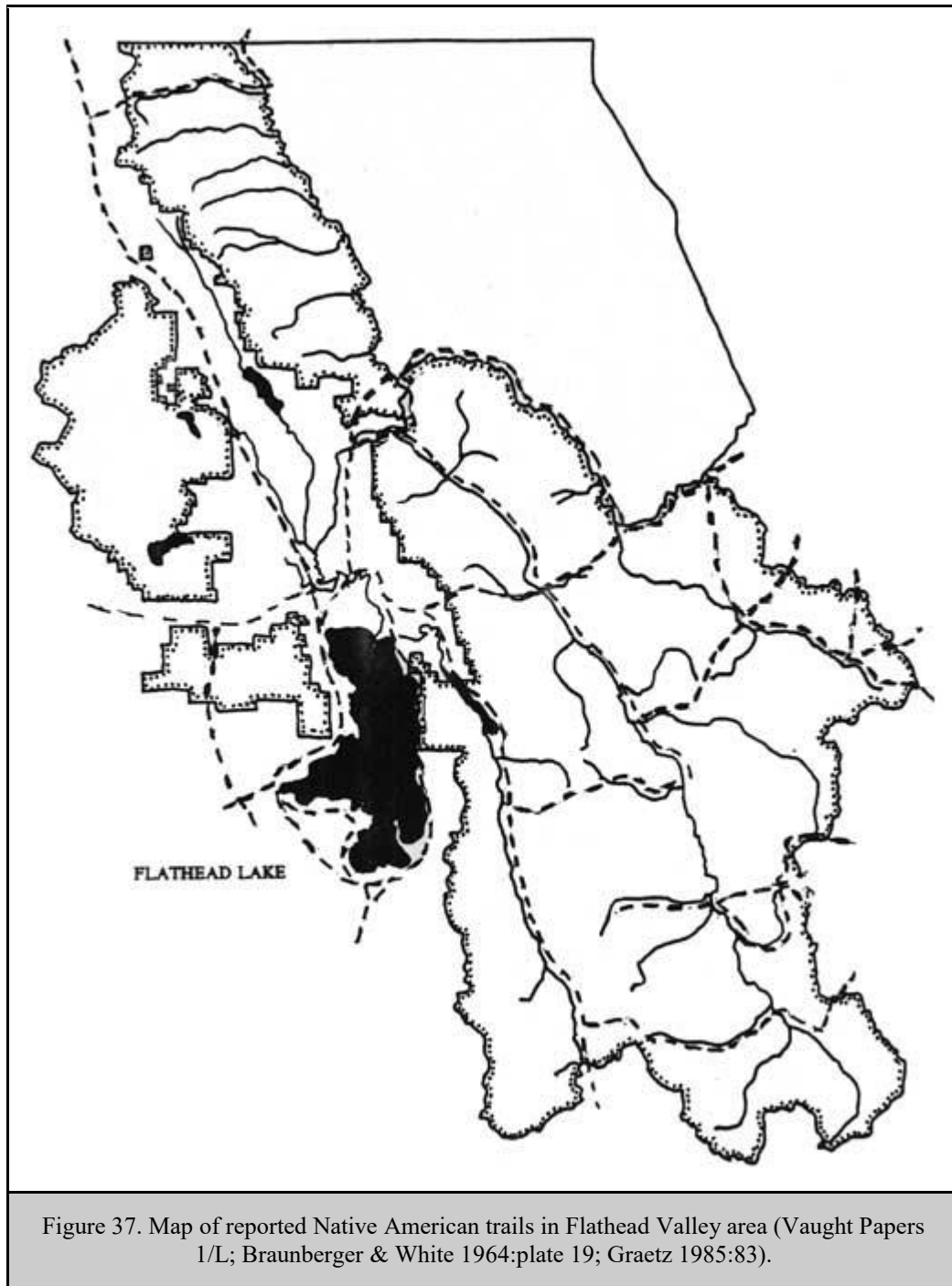


Figure 37. Map of reported Native American trails in Flathead Valley area (Vaught Papers 1/L; Braunberger & White 1964:plate 19; Graetz 1985:83).

The length of time the verified Native American trails were in use is unknown. A 1900 description of trails existing in the area's mountains before 1898 is as follows:

There are old blazes in the mountains indicating old trails that must be 40 years old and while they are all blown over, still are a certain guide in going through the country. The South Fork country about 40 or 50 years ago, was the through route of the Hudson Bay Company from the North-west to the South-east. The Indians have also been through this

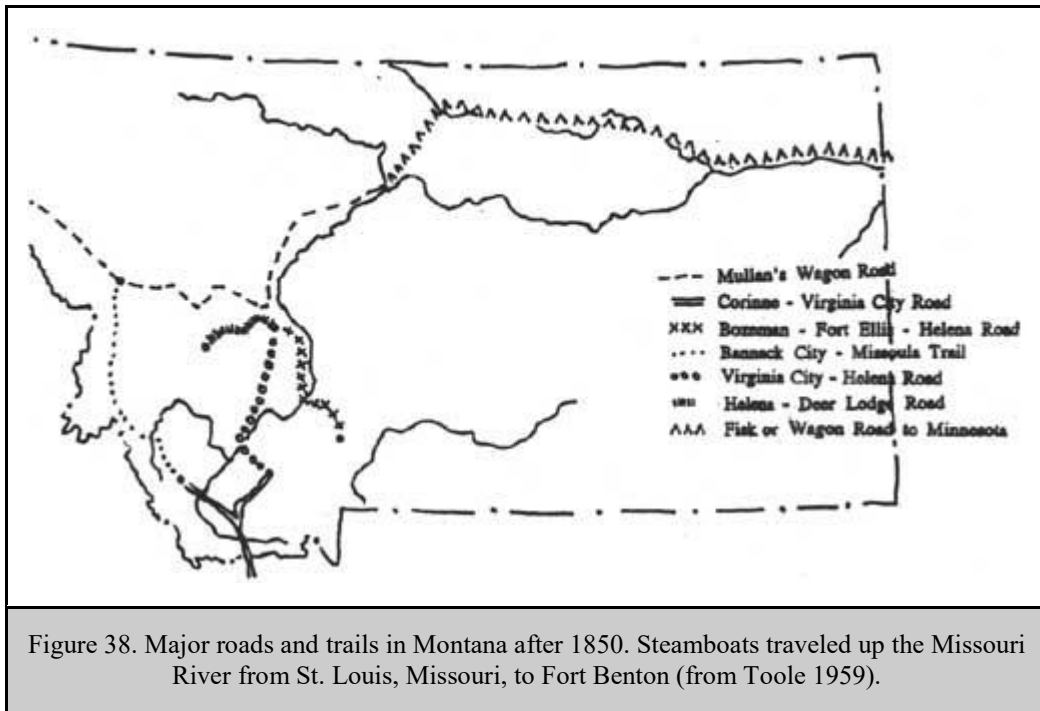
country for years and while their trails are not open and very hard to follow yet in a pinch a man can work his way through (J. B. Collins to GLO Commissioner, 24 August 1900, entry 44, box 4, RG 95, NA).

The routes of various trails changed along with variations in the timber and wildlife conditions. According to a Blackfeet tribal leader in 1853, Marias Pass had not been used for many years, but formerly it was almost the only thoroughfare used by Native Americans in crossing the Continental Divide. Frank Liebig reported that Marias Pass was used very little by Native Americans because the area from the pass west to Fielding and Java was a "poor country for game" for a long time. Nyack Creek, on the other hand, had "all kinds of elk and sheep." He said, "I think the abundance of game lured the Indians across these passes." From Java down to Belton, before the railroad tote road was built in 1891, "it was a hard Canyon to get through, no game no horse feed, no trail, and a trail hard to maintain in a rough and cliffy country." The route was also practically obliterated with downed timber (Sheire 1970:75-76; Vaught papers 1/L).

Wagon Roads

For many years the main routes for people and supplies into what is now Montana were from the south through Salt Lake City, from the east by wagon trains, or by pack trains from Walla Walla, Fort Colville, or even San Francisco. In the early 1860s travelers began to use the Missouri River seasonally. The first steamboat had navigated the river from St. Louis to Fort Benton by 1859. The arrival of the Great Northern Railway in Montana heralded the end of steamboat travel on the Missouri River (Paul 1963:54). Travel within the state for many years centered on pack horses. As roads were carved through the woods of western Montana, travel by team and wagon began to be possible, although often still challenging.

The Mullan Road was built as a wagon road from Fort Benton to Fort Walla Walla. The road was finished in 1862, just as the gold rush got under way; miners and a few settlers travelling to Oregon Territory kept it busy. Soon, roads were built from the south. The northern offshoot of the Oregon Trail was the Bozeman Trail, which extended from a fort in Wyoming to Virginia City, Montana, and was popular beginning in 1864. The Fisk wagon road was the northern overland route, used first in 1862 (see Figure 38) (Athearn 1960:87-88, 91; Toole 1959:85, 88-89).



In 1865 Governor Edgerton signed an act incorporating the Fort Benton and Kootenai Wagon Road Company, which planned to build a wagon road from Fort Benton to Marias Pass and on to the intersection with the Fort Steele-Kalispell Trail. Blackfeet hostility, however, led to the toll road project being dropped, and the charter was later cancelled (Elwood 1980:22).

A number of the early wagon roads were built over Native American trails, as they were already somewhat cleared and were often the best route to take through an area. One of these was the Fort Steele-Kalispell Trail (also called the Tobacco Plains Trail or Road), used by miners going from the Missoula area to mines in British Columbia (see Figure 39). That route had been used for a long time by Native Americans traveling between the Bitterroot Valley and the Tobacco Plains area (O. Johnson 1950:16).



Figure 39. Freighter on Fort Steele-Kalispell trail (courtesy of Mansfield Library, University of Montana, Missoula).

In 1891 early settler Henry Bierman traveled this route with a team and wagons from Spring Prairie, near today's Kalispell, to Tobacco Plains in 1891. "By going ahead with an ax and cutting timber and brush and then following up with the teams, we made Ant Flats in 13 days. Some places we had to let the wagons down with ropes." In 1893 he was hired to be the supervisor of a road improvement crew on this rough road (Bierman ca. 1939:41-43).

During the construction of the Great Northern Railway, vast amounts of freight were brought to the Flathead Valley via the Northern Pacific Railroad to Ravalli, by wagon to the foot of Flathead Lake, and then by steamboat to Demersville. Supplies for Canadian Pacific Railroad workers in British Columbia were also brought by freighters along this route and then taken by wagon to Canada. This freighting to Fort Steele continued long after the railroad reached Kalispell (Elwood 1980:107).

Until the late 1880s and the rise of Demersville, Flathead Valley residents bought many of their supplies at trading posts south of Flathead Lake or in Missoula. Until steamboat travel on the lake, all travelers followed a rough trail along the west side of Flathead Lake. By 1885, steamboats connected the foot of the lake with the upper Flathead Valley and points between (see Figure 40). The first boat, the Swan, sometimes took as long as a week to travel the length of the lake. Steamboat activity on the lake peaked in 1915, when more than 20 boats were operating. The steamboats on Flathead Lake were used as a connecting link between the

Northern Pacific Railroad on the south and the Great Northern Railway on the north (see Figure 41) (Biggar 1950:115; Elwood 1976:60-61).

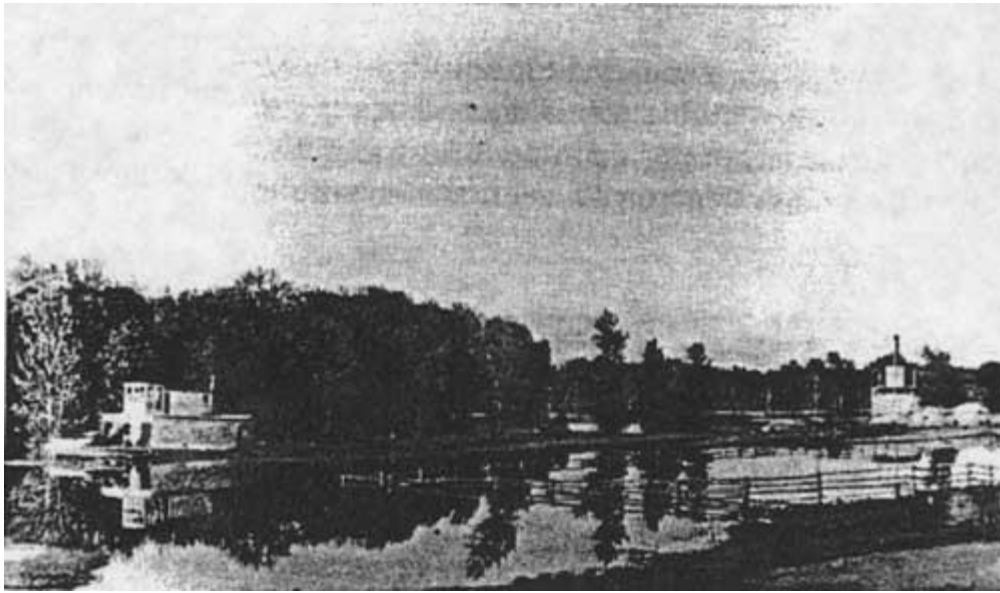


Figure 40. Mary Ann and State of Montana at Demersville, 1891 (courtesy of Mansfield Library, University of Montana, Missoula).



Figure 41. Map of Flathead County, ca. 1905, showing towns along the railroad lines, boundaries of the Flathead Indian Reservation, steamboat routes, and the proposed route of the Milwaukee & Great Northern Railway along the east shore of Flathead Lake (map in "Montana - Flathead County - Maps," Flathead County Library). The original route of the GNR is shown as a spur line from Columbia Falls to Kalispell and Lakeview.

The completion of the Northern Pacific line into Polson in 1917, and the increased use of automobiles, greatly reduced the demand for lake transportation, and passenger steamboat travel on Flathead Lake ended about 1925. Lumber company tugboats continued operating on the lake into the 1940s, however (Bergman 1962:78-79; Elwood 1976:61).

By 1888 a mail and passenger stage line connected Ravalli with Demersville. The trip took four days round trip and was popular during cold weather when the steamboats could not make their

runs. The road along the east shore of Flathead Lake was built by convict and settler labor in the 1910s, although a rough wagon road had existed before then (Bergman 1962:64; Robbin 1985:28).

Travel in the Flathead Valley in the 1880s is described vividly by Margaret Rising, who had a ranch near Bad Rock Canyon in 1887. "There were no fences or roads at all and we just went the best way we could find across the bunch grass and through the heavy timber. We had a blazed trail through the timber so that we could get a team through and not hit too many trees and stumps" (Johns 1943:III, 41).

Gradually, settlers built bridges or operated ferries at river crossings. The Holt ferry was the first on the Flathead River, and it was not replaced by a bridge until 1942. A number of important bridges were built in the 1890s, including the Old Steel Bridge near Kalispell (1893), the Red Bridge near Columbia Falls (1896), and the Middle Fork bridge at Belton (1897) (Flint 1957:7; Robinson & Bowers 1960:62; Blake 1936:2).

The Flathead Valley was not directly accessible from the east until 1890, when Great Northern Railway contractors began building a wagon road known as the "tote road" from Bad Rock Canyon to the summit at Marias Pass for hauling their supplies. By the spring of 1891 a stage line was running between McCarthysville, near the summit, and Demersville. This was probably short-lived because the railroad came through later that year and the town of McCarthysville soon faded away. Henry Bierman reported that it took him 10 days to travel from McCarthysville to Columbia Falls with his team in 1891. During the summer of 1891 John Kennedy furnished the beef for the construction camps. Cattle were driven from Two Medicine and herded in corrals along the route. The cattle were slaughtered near the regular camps and the remains left there. Grizzly bears would be attracted to these piles of hides and offal, so people would hunt bear at these locations (*Inter Lake*, 14 November 1890 and 27 March 1891; Bierman ca. 1939:40-42).

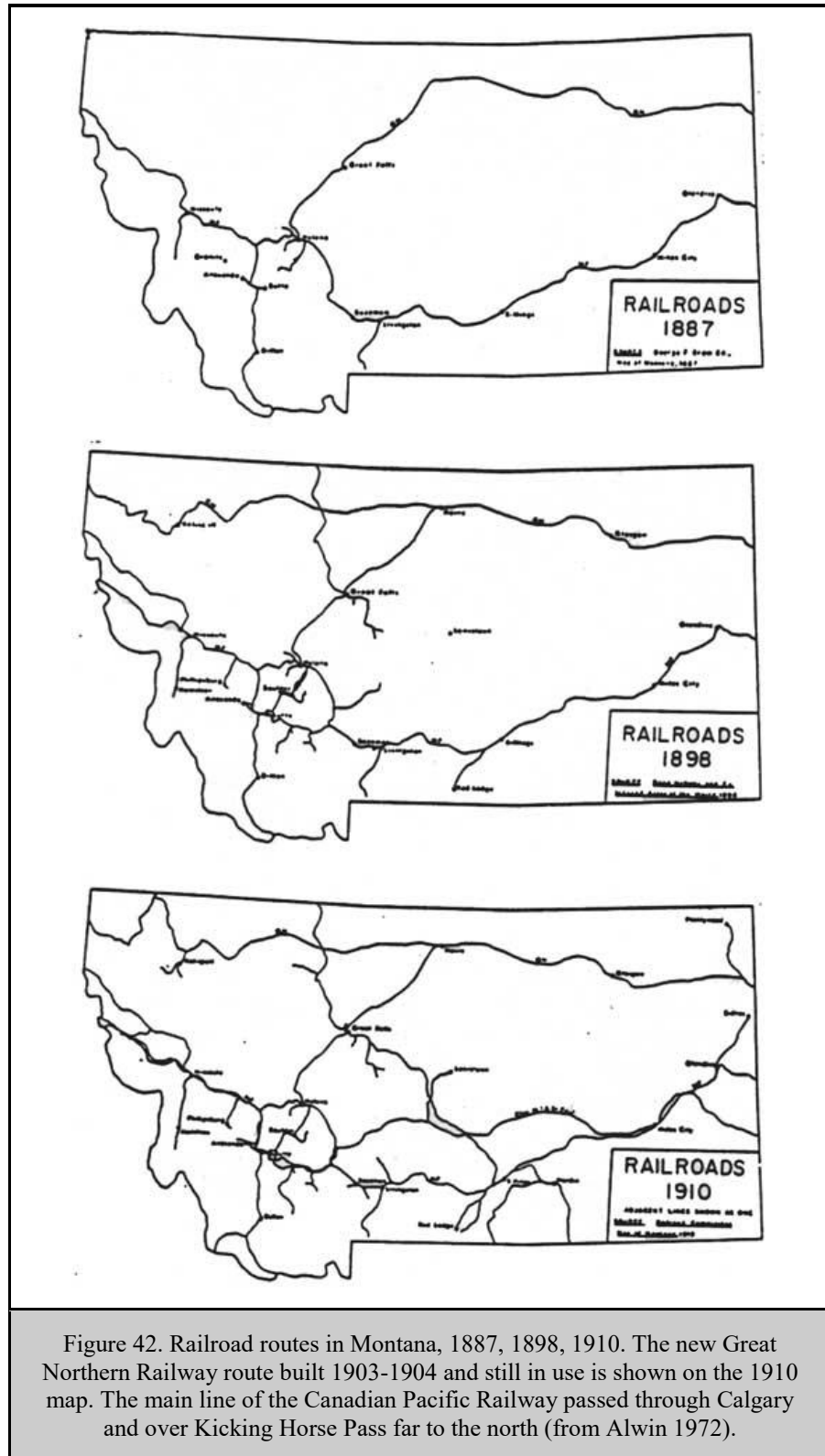
The men at railroad construction camps denuded the surrounding hillsides of timber, consumed vast quantities of wild game, and started numerous forest fires. They also attracted all kinds of entrepreneurs and dealers to the area, including smugglers. For example, when the railroad was being built through the Flathead, the North Fork provided a route for horse thieves, smugglers, and for Chinese and opium to cross the border (DeSanto 1985:26).

Some of the valleys in the Flathead had difficult access for many decades. To travel to the Swan Valley in 1918, for example, one followed a 7-mile wagon road from Bigfork to the foot of Swan Lake and then took a boat up the lake (in the summer) or a 13-mile pack trail along the east shore (in the winter). From the south, a road/trail led from Ovando to Swan Lake. Early trips from the Swan Valley to Missoula generally took five days by wagon (Flathead National Forest "General Report" 1918; Wolff 1980:54).

Railroads

The transcontinental railroads had a tremendous influence on the development of the West (see Figure 42). With the coming of the Great Northern Railway to the Flathead Valley in 1891, residents enjoyed national rather than local markets for their products. During the Klondike gold

rush of the late 1890s, business boomed throughout the Pacific Northwest as supplies for stampeder were shipped by railroad to jumping-off points like Seattle.



By 1889 the Great Northern Railway had reached Havre, east of the Rockies, but the company still did not know exactly what route it would take across the Continental Divide. James J. Hill asked location engineer John F. Stevens to find out whether Marias Pass existed and could be used as a railroad route, as it was the most direct of all proposed (it was shown on an 1887 GLO map of Montana). Besides the Marias Pass route, railroad officials considered three other possible paths across the Rockies: along the North Fork of the Sun River; west from Butte across the Bitterroots; and along the South Fork of the Sun River over Rogers Pass to Missoula. Stevens traveled to the top of Marias Pass with a Kalispel (Native American) guide and reported favorably on the pass's potential. Meanwhile, Charles F. B. Haskell examined the western approaches, including the route west of Kalispell across what is now known as Haskill [*sic*] Pass into Pleasant Valley. In 1925 the Great Northern erected a bronze statue of Stevens at Marias Pass, commemorating his 1889 winter trip to the summit (he did not himself claim to have been the first Euroamerican to have crossed the pass) (Hidy 1988:74; J. Stevens 1935:672, 674; Haskell 1948:3).

For a variety of terrain and economic considerations, the Great Northern Railway chose the route across Marias Pass for crossing the Divide. On January 6, 1893, the last spike was driven on the Great Northern transcontinental line between Minnesota and the Pacific Ocean (Hidy 1988:74, 83).

In 1904 the Great Northern Railway relocated its main line between Columbia Falls and Jennings (near Libby). The division point was moved from Kalispell to the new town of Whitefish, creating a shift in population and to some extent in economic activity in the valley. At least one Flathead Valley old-timer grumbled that guides and trappers had recommended that route back in 1891 to James Hill, but "the wise boys in St. Paul said it was too far north." Some people with businesses along the abandoned main line sued the railroad. Stock raisers west of Kalispell and a Pleasant Valley lumber mill owner settled for damages to their businesses with the railroad company (City of Kalispell 1921:42-43; O'Neil 1955:151; "Old-Time Flathead Tales" 1939).

Between 1910 and 1916 several different schemes to connect the upper and lower valleys by railroad were seriously considered. The Northern Pacific did build tracks to Polson in 1917, but a line along Flathead Lake never materialized. In the early 1890s A. B. Hammond of Missoula promoted the idea of a railroad line that would compete with the Great Northern Railway. He hoped for a branch line of the Northern Pacific that would extend to the northern end of Flathead Lake, and the company agreed to build it if private interests could raise \$100,000. The money was not raised, and the line was never built (Biggar 1950:122; Coon 1926:129).

Other railroad routes that did not materialize included one connecting the North Fork of the Sun River with Bowl Creek, the Middle Fork, and Coram; the Flathead Interurban Railway which would have connected the major communities in the Flathead Valley (ground was broken for this in 1911); a line from Bonner through the Swan Valley and up the North Fork to Fernie, B. C. (two routes were actually surveyed in the North Fork in 1909); and a line to run from Ravalli to Demersville to the coal fields in the North Fork (Elwood 1980:147; Graetz 1985:90; Ingalls ca. 1945:5). These projects were generally aimed at reaching particular natural resources that might offer the chance of bringing in great revenue.

The Canadian Pacific Railroad reached Calgary in 1885. Before the main line was built, most of the mail addressed to the Kootenay area of British Columbia went through the United States with American postage. A spur line from Fernie to Coal Creek was built in 1898 and ran until the mines closed in 1958. The railroad proposed building all the way south to the international boundary but never did so (Beals 1935:19; Fernie Historical Association 1967:39, 41).

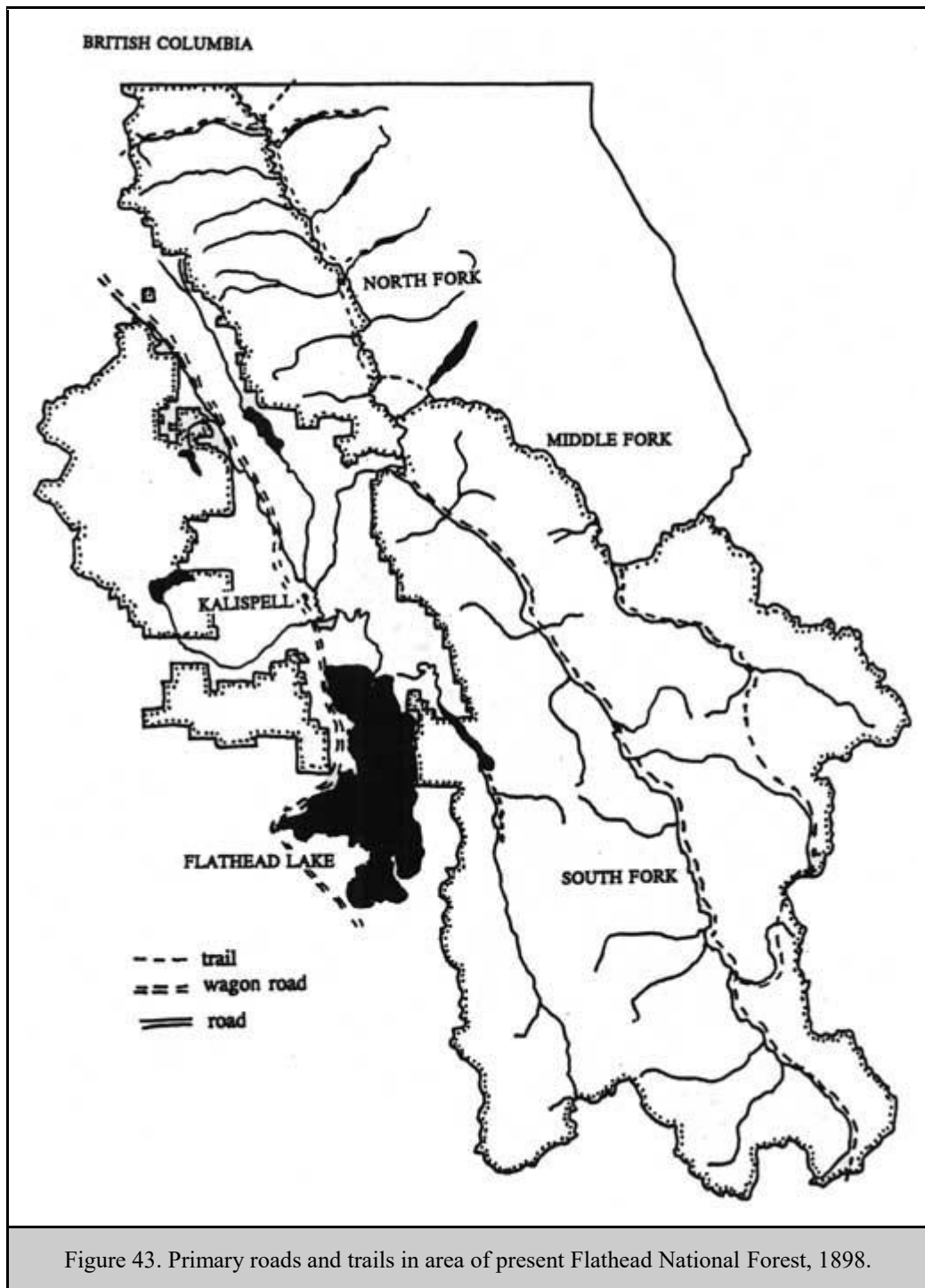
Automobiles

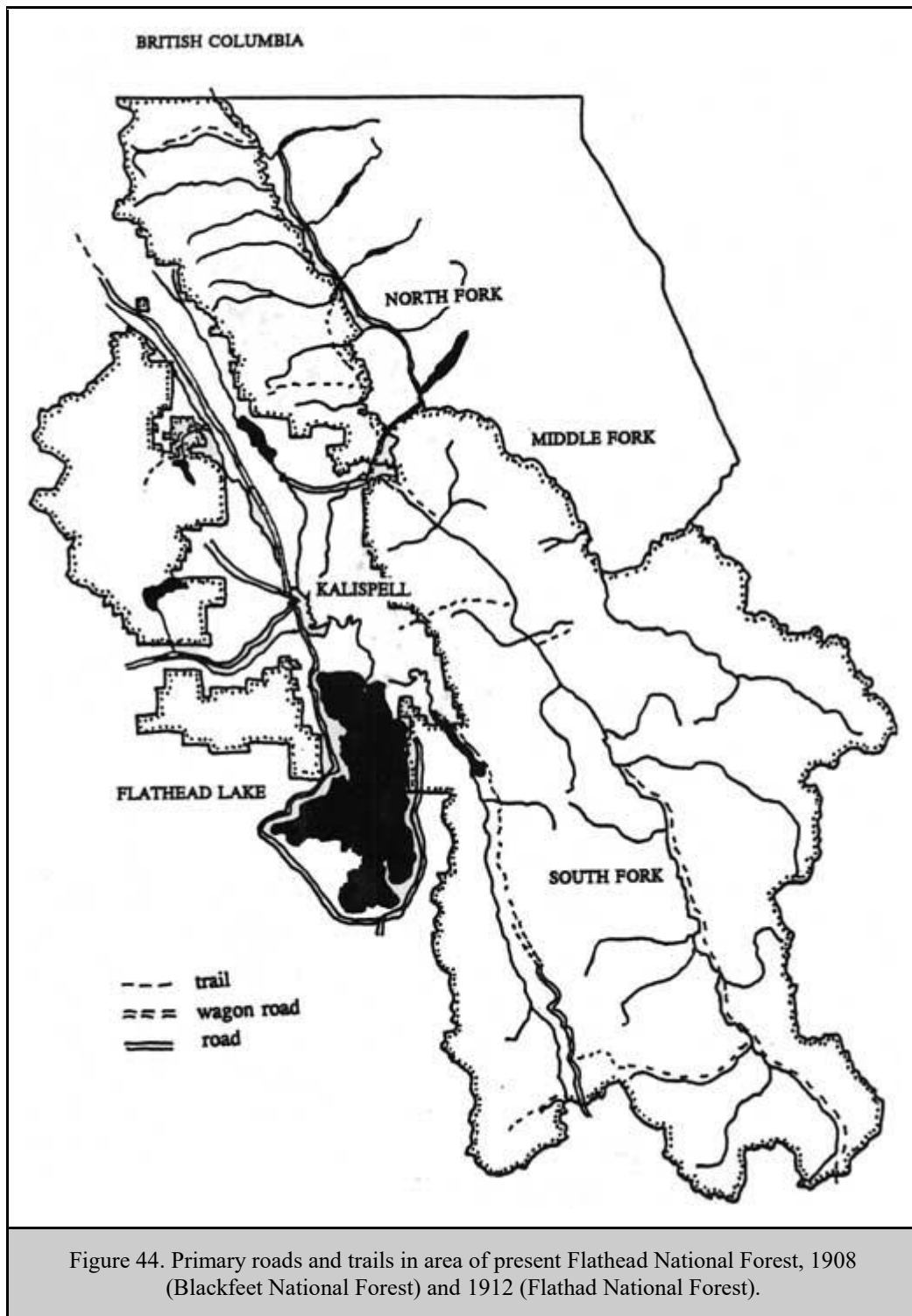
The first cars were delivered to the Flathead Valley ca. 1905. In 1910, 60 Kalispell residents owned autos, and in 1919 the Flathead Valley could boast of about 2,000 automobile owners. Through the 1920s automobile driving in the Flathead Valley was still primarily a recreational activity, although doctors and other businesspeople used cars and trucks for their work. Building good roads was rationalized initially for the economic benefits and for the contributions to national defense, but recreational benefits underlay much of the early demand for highway improvement. In fact, the Good Roads Movement had been established in 1888 by the League of American Wheelmen (bicyclists) (McKay 1993:14; Jakle 1985:120).

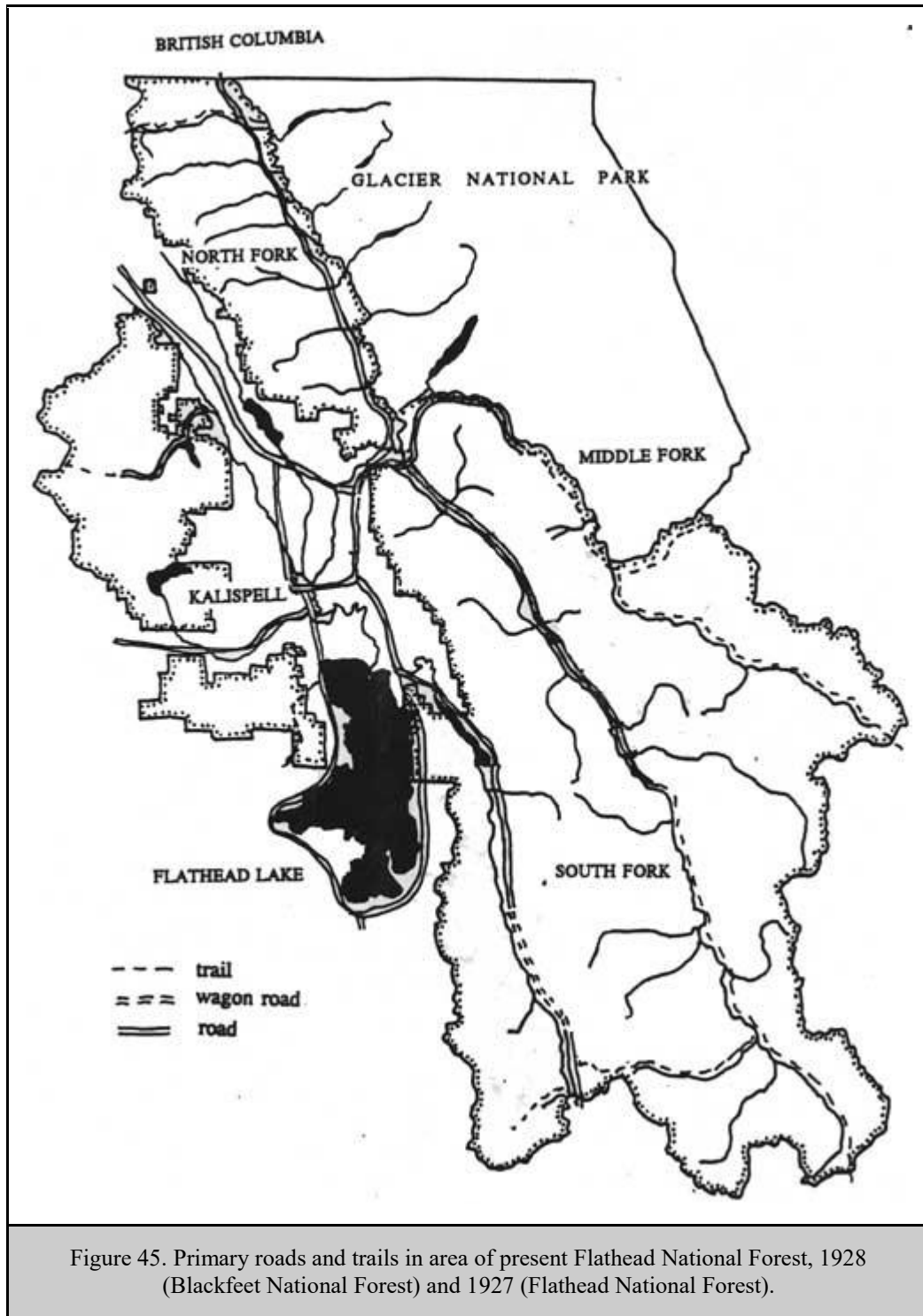
Early county road construction mostly involved short-haul dirt roads built without the advice of engineers. Most of these roads were impassable during periods of heavy snow or spring thaws. Taxpayers could either pay cash to support the roads, or they could work on the roads themselves in lieu of payments (Wyss 1992:13).

The State Highway Commission first met in 1913, and until 1917 it was restricted from cooperating financially with the counties in a road construction program because of a lack of funds. The Commission did allow a limited amount of money to counties for road construction, and it purchased and equipped eight teams for use by prison forces on road construction (Montana State Highway Commission 1943:11, 12).

In 1917 the Montana legislature initiated a uniform system for construction and improvement of the main highways of the state. Early State Highway Commission contracts required a 22' roadway. In 1927 the state assumed the responsibility for snow removal (Wyss 1992:25, 31, 35). In the 1920s the federal government spent unprecedented amounts on road and highway development. The completion of several automobile roads greatly affected transportation patterns in the Flathead Valley. These included the highway over Marias Pass (1930), the Going-to-the-Sun Road in Glacier National Park (1932), and the Swan Valley highway (1958) (see Figures 43-48).







Forest Service Trails

An early, overriding job of forest rangers and guards on the Flathead National Forest was the creation of an effective transportation system. Because of budget constraints and the steep, rugged terrain, they generally built trails rather than roads. Until 1905, while the forest reserves

were still administered by the GLO, supervisors did not bother to develop plans for road and trail systems; instead, rangers constructed trails to meet immediate needs. Some of the early "trails" were just blazes hacked through the woods. As ranger Jack Clack commented about traveling in the South Fork in 1907, "Trails... were considered a luxury anyhow, something very nice to have if you could afford it but not an absolute necessity." H. B. Ayres reported in 1900 that on the Lewis & Clarke Forest Reserve (south of the Middle Fork) the underbrush was generally not dense and that one could ride horses anywhere except in damp ravines with abundant yew (Caywood et al. 1991:20; Clack 1923a:6; Ayres "Lewis & Clarke" 1900:45).

Forest Service trails generally were designed to follow the shortest route between two points with a minimum of elevation change (usually along river bottoms through thick lodgepole and undergrowth). The best location for trails was debated over the years. In 1929 a Flathead National Forest employee argued that trails should not be built along creek bottoms but should be located on ridges because ridge trails would give a smokechaser more chance of spotting and then finding fires. Ridge trails also cost less to construct than river trails, although spur trails to water were required (Fredlund 1971:43; Wiles 1929: 5-6).

The purposes of Forest Service trails were fire control, administration, grazing, and recreation. According to a 1935 manual, "Well-balanced work, not polish, is wanted." The manual recommended locating trails on southern exposures, ridges, benches, natural openings, open timber, and in light stands of brush whenever possible (USDA FS "Forest Trail Handbook" 1935:5, 7-8, 11, 14). Crews built bridges to eliminate difficult stream crossings (see Figure 46).



Figure 46. Fitting the abutment timbers on the Big Prairie bridge over the South Fork, 1922 (courtesy of Flathead National Forest, Kalispell).

Although most trails were originally built for fire protection purposes, some - especially in the Lake McDonald area - were built specifically to open up the backcountry for tourist use. Trails were constructed to different standards depending on their anticipated use. Glacier View Ranger

District packer Bill Yenne described a "way trail," the lowest level of construction, as "scarcely passable for a jackrabbit" (Liebig 1936:15; Yenne 1983:32).

In 1900 there were about 200 miles of old but passable trails on the South Fork and its tributaries. The regional supervisor reported that "Our forest force have taken a great many of these old trails and changed them, making shorter cuts, or avoiding swamps and steep hills. In making this estimate I cannot call them open trails, but trails that can be followed through the country" (J. B. Collins to GLO commissioner, 24 August 1900, entry 44, box 4, RG 95, NA). Travel remained slow at best, even in areas no longer considered remote.

One of the early official trails in the Flathead National Forest went 21 miles from Ovando to the Danaher Basin. It was completed in 1903. In 1906, rangers were stationed for the first time at the head of the Spotted Bear and White Rivers, creating a need to build trails up those streams. In that year, rangers "pushed a trail of sorts up river as far as Spotted Bear, and from the head of the river down to Black Bear," but there was no trail between the two. This South Fork trail was the main route through the early forest reserve south of the Middle Fork. In 1900 there were about 135 miles of trail on the Swan River, plus about 12 shorter trails ranging from 10 to 30 miles in length (Flathead National Forest, "Informational Report" 1939; "Reports of the Section of Inspection," Elers Koch, 28 November 1906, RG 95, NA; USDA FS "Early Days" 1944:101; J. B. Collins to GLO commissioner, 24 August 1900, entry 44, box 4, RG 95, NA).

In 1920 a forest inspector felt that the trail mileage on the Flathead National Forest was still "surprisingly low" and that vast areas still had no trails. He said much of the trail money was spent on the main river trails instead of on lateral trails and criticized the rangers for building two and even three trails along the South Fork in an unplanned "process of evolution." He mentioned that although 1,000 trail signs had been painted they were not yet posted, leaving some major intersections unmarked (Elers Koch, 19 July 1920, Flathead 1920-23 Inspection Reports, RG 95, FRC).

By 1936, the Flathead National Forest had constructed 4,500 miles of trail. At that time there were only 360 miles of highway and Forest Service development roads on the Forest. In the 1930s, according to Pat Taylor, "Everything was walking. Men walked on these trails. The assistant ranger and the ranger rode and the packer rode but the rest walked" (Blake 1936:2; Taylor 1981).

For years after 1918, a large portion of road and trail funds were used in Region 1 to build trails into the backcountry (USDA FS "History of Engineering" 1990:20; R. West 1938:1). Trail mileage on the Flathead National Forest was declining by the 1950s, however. In 1955, trail mileages were as follows:

- Big Prairie: 485 miles
- Condon: 278 miles
- Coram: 402 miles
- North Fork: 421 miles
- Schafer: 405 miles
- Spotted Bear: 543 miles

Swan Lake: 263 miles

Tally Lake: 261 miles plus 92 more on Northern Montana Forestry Association protection area on Tally Lake RD

(FNF "Transportation System Inventory" 1955).

The total mileage was 3,150 miles. Thirty years later the trail mileage on the Flathead National Forest had dropped to 2,146 miles (FNF "Forest Plan" 1985:S-15).

The Middle Fork trail (along the railroad tracks) was also an early priority; by 1906 Forest Service workers had cut it out except for three miles just below Java, but its completion was delayed by the deaths of rangers McElroy and Harbin in a railway accident. Professor Morton Elrod of the University of Montana filed a complaint about the condition of this trail, but the inspector commented that "no one but a very nervous man or one unaccustomed to the mountains would give the trail a second thought in going over it with a pack outfit" ("Reports of the Section of Inspection," Elers Koch, 28 November 1906, RG 95, NA).

By far the easiest transportation route for early forest rangers was the Great Northern Railway tracks, and rangers used gas speeders along the tracks to cover the area from Summit all the way to Eureka. In the Middle Fork, fire crews were ordered by wire from Kalispell and sent in by train to the closest point (USDA FS "Early Days" 1955:73-74).

In the early years, some Forest Service workers attempted to use rivers for transportation corridors, as some of the early trappers had done. In 1915, for example, several timber cruisers decided to return to Coram from the Riverside Ranger Station on the South Fork by raft. One went over a waterfall and ended up snowshoeing the rest of the way out (USDA FS "Early Days" 1955:81-82).

An attempt at alternative transportation methods was made in 1923, when rangers Henry Thol and Ray Trueman tested sled dog teams in the backcountry. On their first trip, they traveled from Coram up the South Fork with 250 pounds of supplies, including two blankets for each man, coming out six weeks later at Holland Lake. The dogs proved unsatisfactory on sidehill trails in rough terrain (USDA FS "Early Days" 1962:209; Thol 1936: 13).

Because of its remote districts, the Flathead National Forest used airplanes regularly by the 1930s. In 1932, one hundred thousand pounds of freight was delivered to a Flathead National Forest landing field at less cost than using a combination of railroad, trucks and pack trains. By 1939, the Flathead National Forest had 10 airplane landing fields. Helicopters came into local use in 1954. They were practical both in regular forest duties and in bringing sick or injured people out of the backcountry (Headley 1932:183; Flathead National Forest, "Informational Report" 1939; Shaw 1967:99).

Forest Service Trail Construction and Maintenance

Early Forest Service trail crews consisted of 10-12 men, including a cook, while later crews generally consisted of 3-5 men who did their own cooking. Trail crews typically lived in tent

camps, which they moved every 7-10 days (see Figure 47). The men were trained and kept available for fighting fires (Swan River Homemakers Club 1993:339; Taylor 1986).

4 axes	7 nested cups
1 5—gallon man-pack bag	1 8' canvas table top
2 2-1/2—gallon water bags	8 table forks
1 crow bar (where needed)	1 pancake griddle
12' log chains (where needed)	2 2—quart kettles
medicine chest	2 4—quart kettles
cap crimpers (where needed)	1 6—quart kettle
4 8" files	1 butcher knife
4 10" files	1 paring knife
1 U.S. flag	8 table knives
Beatty trail grader (where needed)	6 lbs assorted nails
claw hammer	3 yards 46"-wide white oilcloth
4-lb falling hammer	6 dessert spoons
axe handle	1 mixing spoon
2 mattock handles	8 table spoons
2 saw handles	1 complete telephone
1 brush hook	3 pie tins
1 timekeeper's kit	8 50-lb flour sacks
1 mattock	dish toweling
1 cobbler outfit	wash tub
1 saw-filing outfit	1 cake turner
2 complete smokechaser's outfits	1 10x12' fly
1 peavy	2 10x12' tents
2 mattock picks	30 wool blankets
1 trail plow (where needed)	extra bed (for forest officer)
1 pack frame	5 tarps
5 1/2' crosscut saws	1 Lang or sheep cook stove
2 LHRP shovels	5 stovepipe joints
3 pocket carborundum stones	1 3—quart dish-up pan
2 falling wedges	3 2—quart dish-up pans
2 wash basins	1 medium fry pan
1 wash board	2 large fry pans
1 2—gallon boiler	8 enamel plates
4 granite soup bowls	1 coffeepot
1 10—quart canvas water bucket	12 cloth lunch sacks
1 can opener	1 meat saw
1 alarm clock	4 yards cheesecloth screen
2 medium bread pans	1 salt shaker
1 bread dish	

Figure 47. Equipment considered necessary for a five-man Forest Service trail crew in 1935 (Fickes 1935:T-13-15)

In the 1930s, the main job of trail crews was logging out trails. One man would go in front with an ax and cut out the trees up to 6-8" in diameter, and two more would follow with a cross-cut saw. They would cut standing and down "pack bumpers" (trees that mules carrying loaded packs might bump into), clear brush, remove snags left by fires, do minor drainage work, kick rocks out of the trail, and freshen up trail blazes (Taylor 1981).

Some trail crew workers did get injured on the job. One compensation case report submitted by a trail foreman featured poor grammar but was succinct: "Please fix this man up with comp. Has fell and hurt his knee. Slick shod. Bad stuff" (Fremming 1931:8).

By 1930 the Blackfoot National Forest was using "gyppo" (contract) trail crews as well as day crews, and they found that the gyppo system cost 1/3 less with no difference in quality. Pat Taylor remembered a trail crew of five German immigrants working on the Tally Lake Ranger District in the 1930s. This crew was unusual because the men furnished their own saws (bow saws, or Swede fiddles) ("Gyppo Work" 1930:7; Taylor 1986).

Way trails, built to the lowest standard, were designed for extreme fire emergencies, not for everyday use. Way trails were cleared to the minimum width required to allow a pack string to pass through, and the maximum grade was 15% (which trail crews checked with a level). Tread work was held to a minimum because pack animals would establish it, and few bridges were built because the stock could ford most waterways. In 1928 the Flathead National Forest built 10 miles of primary trails, 81 miles of secondary trails, and 312 miles of way trails, for a cost of \$522, \$178, and \$113 respectively. Way trails were clearly the cheapest and easiest to construct but certainly not the best for traveling (Taylor 1986; USDA FS "Forest Trail Handbook" 1935:15; Wiles 1929: 6-7).

The Forest Service blaze in the 1930s had a 4"-high mark on top, and then 4" below it was a lower blaze 8" in height. Workers cut the blazes 30' apart at eye level facing both directions on the trail. Early trail signs were made of enamel and had black letters on white backgrounds. By the 1950s the Forest Service was using imprinted aluminum or routed wood signs. The Forest Service used to post mile boards on the trails (Taylor 1986; 1956 inspection report in 24PW1003, FNF CR; Howard 1984).

The Forest Service experimented with a number of mechanized tools for trail building and maintenance and even helped sponsor some industrial development work for particular machinery. For example, in 1923 the Flathead and Blackfoot National Forests performed field tests of the Wolf power saw (a forerunner of the chain saw). They concluded that the saw had "very real possibilities for use in areas where heavy sawing jobs exist," but that it was not suitable for light work. In 1950 chain saws were not being used extensively for trail work because they were only needed intermittently; they were more practical in heavy blowdowns. The cutter bars at that time ranged in size from 14" to 6' in length (Frank J. Jefferson, 3 August 1932, Flathead Inspection Reports, RG 95, FRC; USDA FS "Trail Handbook" 1950).

In 1925 the Blackfoot National Forest bought six of the "new model" Beatty trail graders, which they used for trail and road construction, and they also tested horse-drawn plows (see Figure 48). They determined that the horse-drawn plow-and-grader system could be used in all terrain

except solid rock, even in heavy beargrass. The cost of construction of over 75 miles of trail built with these plows and graders was 1/5 to 1/4 the cost of hand labor. The Flathead National Forest reached similar conclusions despite "considerable opposition" to the new tools. Popular for many years, the Beatty trail grader was last manufactured in 1952 (USDA FS "Trail Handbook" 1950:34-35; "Use Horses" 1925:14-16; Mendenhall 1926:4).

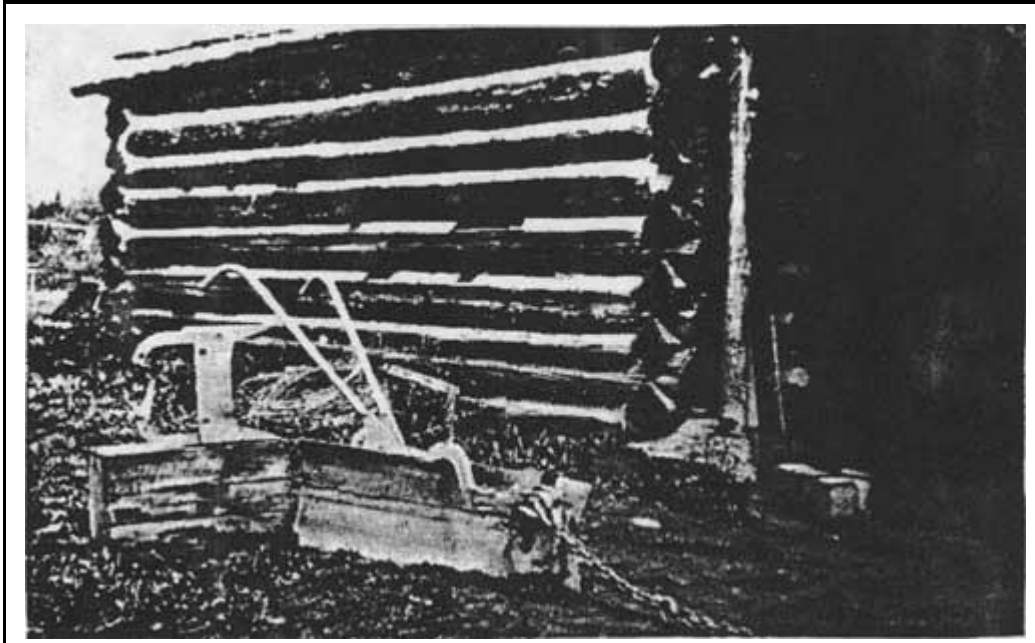


Figure 48. The Beatty trail grader (courtesy of Flathead National Forest, Kalispell).

Eventually trail maintenance within the Forest Service became the responsibility of the Recreation department, reflecting the shift away from the original purpose of improved transportation networks for Forest protection (Caywood et al. 1991:66).

Forest Service Use of Pack Animals

Since most of the Flathead National Forest was accessible only by trails for many years, the Forest Service relied heavily on pack animals. At first, rangers were required to furnish their own saddle and pack horses.

The first pack animals purchased by the Forest Service for use in the Northwest were reportedly eight head of horses that Jack Clack brought to Big Prairie on the South Fork in 1907 or 1908. The experiment in breeding these horses failed, and the government subsequently purchased all of its stock. In those early years, according to one Flathead National Forest employee, the pack animal was generally a cayuse that "could be had for a song - even an off-tune song" (Frohlicher 1930:456-457; Caywood et al. 1991:25).

Jack Clack probably brought the horses to Big Prairie because of an inspection report in which Elers Koch commented that rangers on the South Fork spent 6-10 days on every trip

out of their district for supplies. Koch recommended hiring one man to constantly deliver supplies with a government pack train from Columbia Falls to Ovando via the South Fork. This basic concept is still being followed in the Bob Marshall Wilderness between Spotted Bear and the Big Prairie and Schafer Work Centers (Elers Koch, 28 November 1906, "Report of the Section of Inspection," entry 7, box 4, RG 95, NA).

In many ways, packers and their stock were the lifeblood of the Forest Service. As Flathead National Forest employee John Frohlicher commented in 1930, "If a lookout, ranger, or firefighter is without tobacco, coffee, or even his mail, he is a discontented human being. The mule packs in whatever is necessary for his peace of mind and body" (Frohlicher 1930:456-457).

Horses were initially the pack animal of preference. In the early years, two men with 15-20 head of horses would work together on long pack trips. They usually herded them down the trail instead of stringing them together (Shaw 1967:23). During the 1910s, almost all Forest Service employees learned to pack a horse; horses were more tolerant of poor packers than mules. According to one Flathead National Forest employee:

mule packers are born, not made...The old heads couldn't stand the mules. They are now found somewhere out in civilization, cursing the animals that chased them from their jobs...The new packers [who used mules]...were better than smokechasers and rangers and lookouts. They admitted it, even though the lesser lights frequently rounded the mules up. Packers' heels are too high to allow much walking. Anyway, a smokechaser should have practice looking for mean things, like fires and mules, the packers reasoned (Frohlicher 1930:457).

According to long-time Flathead National Forest employee Charlie Shaw, packers generally preferred mules to horses for packing because they were more sure-footed, required less feed, could carry heavier loads, had a smoother gait, stayed with the bell mare at night, and would not try to rub their packs off against trees along the trail. On the other hand, mules tended to hide out when wanted, to bog down in muddy trails, and to do poor work logging and trailmaking (Benson 1980:22; Frohlicher 1930:458).

In the spring, pack animals destined for the Flathead National Forest were driven from their winter range near Flathead Lake. The Holt Ferry brought them across the Flathead River, with their destination the Echo Ranger Station corral. There the South Fork and Echo stock were cut from the herd, and the rest of the stock headed up the Swan the next morning. During the winter, employees at the station did all the tack and saddle repair for the Forest (Swan River Homemakers Club 1993:339).

"Main line" packers supplied workers in isolated districts so that they did not have to travel out of their area themselves. Each district also had its own packer, and all employees learned to pack short strings (up to five head). Backcountry ranger districts relied on the packers for food. The cook at Big Prairie in 1926, for example, recalled running low on food; he served ham with the mold washed off until the packer arrived. Most ranger districts had a large

number of stock. Tally Lake, for example, had 32 head of horses and mules in 1930. At that time the Flathead National Forest (south of the Middle Fork) owned approximately 200 head of pack horses and mules (Montgomery 1982; Taylor 1986; USDA FS, "Flathead National Forest" ca. 1929).

The Coram Ranger Station, located at the north end of the Coram-Ovando supply line, served as the primary distribution point for the entire South Fork. By 1914, 20 tons of hay were harvested from a 10-acre field at Coram. The hay was used by government pack strings in the summer and for district rangers' horses in the winter. Coram served as district headquarters until it was consolidated with Hungry Horse in the late 1960s or early 1970s. Until at least 1956, the Big Prairie Ranger District cut enough hay for its own use, storing it loose. At that time the district did not have a hay baler, but in the 1920s it used a handmade baler. Spotted Bear also had a handmade baler in 1924, which it used in haying at Bruce Meadows (24FH443, FNF CR; 1956 inspection report in 24PW1003, FNF CR; 3 November 1924, Flathead Inspection Reports Region One, RG 95, FRC).

In the 1920s the Flathead National Forest had 10 main-line packers, each with a string of nine mules and a horse. The main-line route went from Coram Ranger Station up the South Fork to Spotted Bear, then on to Schafer and Big Prairie. The work centers and cabins along the route provided stopover spots for the packers. According to packer Toad Paullin, "There was no such thing as an eight hour day or coffee breaks. When you got one load there, you just turned around and went after another one." During the 1926 fire season, Paullin hauled supplies day and night for 55 straight days, sometimes reaching a fire camp only to find it had been burned out. One of Paullin's memorable packing feats was in 1955, when he hauled a 16' x 4' aluminum boat from Spotted Bear to Big Salmon Lake (see Figure 49) ("With 'Toad' Packing" 1982:20).



Figure 49. Fire control officer Theodore W. (Toad) Paullin and a "short string" in Bob Marshall Wilderness, 1967, on ridge along trail to the old Picture Lookout point (photo by George R. Wolstad, courtesy of USDA Forest Service, Region One, Missoula).

The packer would generally start out about 4 a.m. to locate his stock; he had to be a good tracker. The saddle horse would be picketed or hobbled, and the bell mare was usually hobbled, belled, and turned loose with the rest. Once he had wrangled the horses and mules, the packer would halter and curry the animals and put on feed bags. He would then take off the nose bags and saddle the mules. If he had not done so the night before, he would "manty up" the load, dividing the articles into side packs and tying them into packs with cargo ropes (see Figure 50) (Taylor 1988; Taylor 1986).

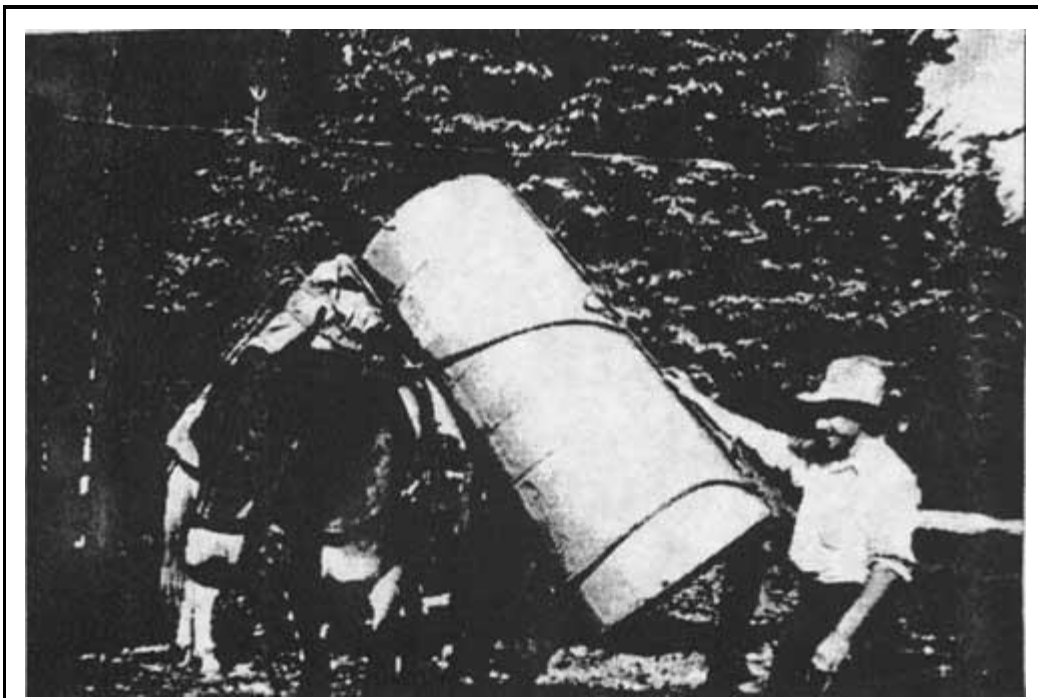


Figure 50. Toussaint Jones packing a hot-water heater to a Flathead National Forest administrative site (courtesy of Flathead National Forest, Kalispell).

By 1924, the Flathead National Forest was putting into effect the "Idaho plan" of replacing horses with mules and adopting the Decker saddle. The Decker packsaddle replaced the sawbuck and the diamond hitch (the last diamond hitch in the Forest Service was thrown in 1928). As Pat Taylor commented, "The 'Diamond Hitch' was being forgotten as fast as possible." The Decker saddle originated in Idaho during the turn-of-the-century mining boom there and was popular because a load that hit an obstacle would shift back into position. With the new system, eight mules to a string with a bell mare and the packer's saddle horse became the norm. The sawbuck saddle and diamond hitch continued to be used in Glacier National Park for a while longer (3 November 1924 memo, Flathead Inspection Reports Region One, RG 95, FRC; USDA FS "Early Days" 1976:43; Taylor 1988; Taylor 1986; Yenne 1983:6, 54; Shaw 1967:23).

During the 1929 fire season, an unusually bad year, Region One did not have enough mules to supply the need. The Forest Service hired 2,000 extra horses and used them to pack tools, food, and bedding to fire crews, working a total of 45,000 horse days. Part of the reason for the shortage of pack animals was that the stock that was formerly available for hire in the region was

being replaced by automobiles and trucks (Frohlicher 1930:457; USDA FS, "Flathead National Forest" ca. 1929).

After the fire season of 1929, Clyde Fickes proposed establishing a Remount Depot for the region. In 1930 the Forest Service leased a ranch 30 miles west of Missoula, and that summer hired stock was sent out to the various Forests as needed. Soon the Remount Depot purchased its own stock. In 1934 the Forest Service bought a ranch, and the CCC constructed buildings at the new Remount Depot. The Flathead, Blackfeet, and Kootenai National Forests had been wintering their stock in the Big Draw near Flathead Lake for several years; the Remount took over that contract. The Remount also trained and sent out plow units (teams of draft horses used to cut a fireline with a plow). Each 10-mule pack string sent out by the Remount Depot supplied a 25-man fire crew plus a cook and packer, and the supplies included cooking utensils, canned goods, sides of beef and other food, and firefighting tools. Some of the canned food had inspirational slogans on them such as "Less Food in the Refuse Pail - Fewer Pack Mules on the Trail" (USDA FS "Early Days" 1944:56-60, 62; Benson 1980:4-7, 21; Howard 1984).

The Remount Depot was phased out beginning in 1953. Some of the reasons for its discontinuation included the use of smokejumpers (resulting in fewer large, remote fires), the much more extensive road system on the national forests, airplane cargo delivery, and the reduced use of lookouts (Benson 1980:31).

While the Remount Depot operation was a success for many years, aiding in the fire and general work of the region, other ideas from the regional office were not so popular on the district level. For example, in 1926 Regional Forester Evan Kelley hired a couple of bronc riders to break the mules at Big Prairie for riding (Kelley was trying to save firefighters the 40-mile walk from Spotted Bear to Big Prairie). The bronc riders "plowed up sections of the Prairie with their faces" until they quit. Only two mules could be ridden, and the firefighters continued to walk in (Frohlicher 1986:98-99).

Another time-saving idea of Kelley's also ended in failure. He wanted to reduce the time it took for packers to balance, mantle, and load mules. To this end, he had a loading dock built at Spotted Bear with a pole, pulley, and rope to hoist the packs up over the mules and lower them to the packsaddles. But, the mules "had to see two legs under the pack when it was coming towards them"; otherwise they broke into frenzied bucking. Even so, an experienced packer with a helper could reportedly load tools, bedding, and two days' rations for 30 men in about 20 minutes without the use of a loading dock (Frohlicher 1986:99-101; R1 PR 798, 29 May 1937).

Forest Service Roads

The lack of roads significantly limited the Flathead National Forest's ability to develop an area (i.e., to use the natural resources such as timber). As early as 1906, forest inspector Elers Koch wrote, "There is an excellent opportunity on this reserve to open up to sale large bodies of timber by the construction of roads up the main valleys. The Swan River and the South Fork of the Flathead are the two best propositions for work of this sort." In the early years, Forest Service workers helped on county road construction. In 1908, for example, Jack Clack was in charge of road reconstruction through Bad Rock Canyon, which required blasting through 1/2 mile of solid

rock. Rangers worked on the job on "contributed time" (Elers Koch to The Forester, 18 November 1906, "Reports of the Section of Inspection," entry 7, box 4, RG 95, NA; Bloom 1933:2).

Before automobiles came into common use, there was little demand for the development of mountain roads. The improvement of Forest recreation roads was initially promoted by the federal government. In Montana, the Bureau of Public Roads supervised all major forest construction projects. The 1910 fires led the Forest Service to push for funding for more roads and other improvements such as trails and telephone lines. The general consensus was that poor transportation and communication systems allowed the fires to get so big (Wyss 1992:43-44; Baker et al. 1993:224).

In the 1920s the Forest Service adopted motorized transport, resulting in the consolidation of many ranger districts and aiding in moving men and supplies for firefighting. Region One bought its first automobile in 1917 (for the Custer National Forest). By 1940 the Flathead National Forest had approximately 32 forest trucks, pickups and cars, 10 pieces of road machinery, and fire pumpers (Baker et al. 1993:73; CCC: Inspection: General: Montana State: Camp S-208, RG 95, FRC).

Before 1912 the Forest Service did not have the authority or the funds to construct, maintain, or manage roads. In 1913 Congress gave the Forest Service the authority to spend 10% of the national forest receipts on roads and trails; the money had to be spent in the state in which it originated. For three years before the Federal Road Act of 1916 was enacted, the federal government provided funds in small amounts for the improvement of roads within the national forests. The Public Roads Administration, the Forest Service, and the State Highway Department combined to develop the forest highway system. The Federal Highways Act of 1916 defined forest roads and provided additional financing. This was the first money available for Montana's Forest roads; it was spent on the Bitterroot Big Hole Road. Beginning in 1921, Forests also received money for roads from the Federal Highway fund (Montana State Highway Commission 1943:59; Burnell 1980:1; Bolle 1959:139).

As defined in 1924, forest highways are sections of state, county, and other important public roads in and adjacent to the national forests that provide primary access to the Forest. They receive federal funds authorized for Interstate Highways, plus funds authorized especially for forest highways. Forest roads, on the other hand, are needed primarily for the protection, development, and administration of national forest lands. Forest roads fall into one of three categories: arterial roads (paved, two-lane: 5% of Region One roads); collector roads (1- or 2-lane roads used for access to timber or recreation: 20% of Region One roads); and local roads (minimum standard, single-lane roads used for a specific purpose such as timber or fire control: 75% of Region One roads). Forest highways on the Flathead National Forest in 1943 included the roads from Fortine to Olney, from the Forest boundary east of Columbia Falls to Glacier Park Station, from the Forest boundary south of Bigfork to the south Forest boundary, and from the Forest boundary at Swan Lake to the Forest boundary at Seeley Lake (Bolle 1959:138; Burnell 1980:1; Baker et al. 1993:225; Montana State Highway Commission 1943:58F).

One of the early forest road projects in Montana was the west side North Fork road. In 1917, Hartley Calkins located the road for some 30 miles, surveying across private ownership almost the entire way. In 1919 the county finished the work on the road from Columbia Falls as far as a couple of miles north of Polebridge, with local settlers working on the road in lieu of paying road taxes. The lower part of the road was built with four two-horse teams, plows, scrapers, and dynamite, and men threw the rocks out of the roadway with pitchforks (this was typical of road construction at the time). Forest Service construction work on the upper stretch of the road took place in 1921, and a new post office was established at Trail Creek. The county used a steam shovel to side-cast material on road widening projects until about 1931, when the steam shovel went over the bank and into the river near the mouth of Canyon Creek. After World War II the Forest Service began to maintain the west-side North Fork road for logging purposes, and in 1949 an agreement was signed providing for the county to maintain the road to Deep Creek and the Forest Service from there north to the Canadian boundary (Glacier View Ranger District 1981; Peterson 1977:6; USDA FS "History of Engineering" 1990:24, 47-48; Burnell 1980:3).

The roads through the Swan Valley and along the Stillwater River were also located in the summer of 1917 using the newly available funding. Settlers in the Swan Valley had been pressing authorities for some time for a road through the valley linking Swan and Seeley Lakes. In 1917 the Regional Forester considered the project "one of the most important in the state." The Somers Lumber Company had built roads between Swan Lake and Cilly Creek, and in 1917 a road was built between Lion Creek and Swan Lake. In 1922 the Swan River road was described as "a wagon track winding through the timber... impassable for an automobile, although cars have with great difficulty reached Holland Creek from the south." From Holland Creek to Goat Creek it was a "circuitous wagon track cut through the timber by settlers," with grades exceeding 20% in many places and with creek crossings made by dropping logs across the streams and flooring them with poles. The road had been developed largely by donation work from the settlers, with a small amount of financial aid from the counties and the Forest Service (F. A. Silcox to the Forester, 10 May 1917, in 1380 Reports - Historical - District 1, RO:5; Conrad 1964:27-29).

Until the road from Coram to Spotted Bear was built in the mid-1920s, it was a 90-mile, 5-day pack trip from Coram to Big Prairie. The road was built with horses hauling the materials and supplies, and road construction camps were located every three miles. The road to Spotted Bear was designed to be 9' wide but, according to a 1927 inspection report, it was actually built to an average width of 15' (see Figure 51) (USDA FS "Early Days" 1962:289; Green 1971:III, 108; Flathead Inspection Reports, Region One, RG 95, FRC).



Figure 51. South Fork road near Upper Twin Creek, 1926 (courtesy of Flathead National Forest, Kalispell).

A general road-building boom hit Montana from 1921 until the start of World War II, stimulated by massive federal spending on roads and highway development. The new roads allowed more recreation on the Forests and increased the value of the timber and mineral resources by bringing them closer to market. After the Federal Highway Act of 1921, roads were a separate line item in the Forest Service annual budget, which allowed the road construction program to expand in the 1920s (Wyss 1992:64; Caywood et al. 1991:35-37).

The first transportation planning on the national forests occurred in the late 1920s. At that time the focus was on fire control, but the uses of roads soon expanded. The transportation plans contained detailed information with economic justifications, plus a key to priorities for construction. Because there were few Forest Service timber sales then, logging roads were almost always of low standard aimed at serving proposed small sales. The Washington Office favored low-cost roads that worked well for fire control but were reportedly "useless" for logging. Eight-foot widths and steep grades were the rule (USDA FS "History of Engineering" 1990:21, 321).

From 1920-27 roads were constructed by first building a horse trail with pick and shovel. A draft horse pulling a two-way plow followed, then a horse-drawn Martin ditcher, which provided the tread for a small tractor pulling a grader. After repeated passes, the roadbed was built (USDA FS "History of Engineering" 1990:24).

At the beginning of the 1930s, Forest Service policy changed to building fewer trails in favor of building a great number of low-class, low-cost fire control roads known as "truck trails." The invention of the bulldozer allowed roads to be built cheaper than hand-built trails. Winter work at

many CCC camps consisted of building roads along drainages, and this allowed Forest Service engineering to take on a larger role within the organization. Major Evan Kelley, a strong opponent of better roads, retired from the Forest Service in 1944. His retirement, combined with the growing demand for national forest timber, led to more construction of improved forest roads (USDA FS "History of Engineering" 1990:23-24).

Still, it took a long time for roads to reach the more remote areas of the Forest. Tally Lake Ranger District, for example, did not have any motor vehicles in 1931, and the only passable road on the district went from Whitefish on Highway 93 and then via the old Tally Lake Road to Star Meadow. In 1933 the CCCs extended this road to about 1/4 mile beyond Taylor Creek (a few miles south of Star Meadow) (Pat Taylor, 1975 interview, in 24FH41, FNF CR).

The Red Meadow Road in the North Fork was built about 1937 by CCC enrollees. As justification for the road, J. C. Urquhart explained that it crossed the Whitefish Divide "at a point from which there are numerous radiating trails; also a considerable mileage of telephone line is maintained from this point. In the event of fires firemen, firefighters, equipment and supplies, etc. can be routed in either direction along the Whitefish Divide (from the top) and dropped onto fires in the heads of drainages much more readily than would be possible without the road" (Urquhart to Regional Forester, 13 April 1938, Inspection Reports, Region 1, 1937-, RG 95, FRC). Forest Service inspectors, however, criticized that particular road for not being wide enough for buses and truck trailers, for lacking spur roads every mile leading to fire campgrounds, and for lacking turn-arounds for about 9 miles above the former CCC camp. It was built on a steep sidehill rather than in the creek bottom, where they felt it would have had greater timber and recreation value (27 December 1937 memo, Inspection Reports, Region One, 1937-, RG 95, FRC).

After World War II, the rising demand for timber, recreation, and more efficient fire control increased the demand for Forest roads in Region One, and as the road mileage increased, the mileage of maintained trails decreased (see Figures 52-55). Road and bridge construction became a major post-war effort, aided by new congressional appropriations and by an accumulation of county road funds. Regional Engineer Fred Thieme, described as a man who "always wanted bridges, roads, and buildings bigger and better than the design called for," was the regional engineer from 1936-1951. The new roads did help provide access to forest fires, but they also ironically increased the risk of human-caused fires (Baker et al. 1993:165; USDA FS "History of Engineering":77, 397).

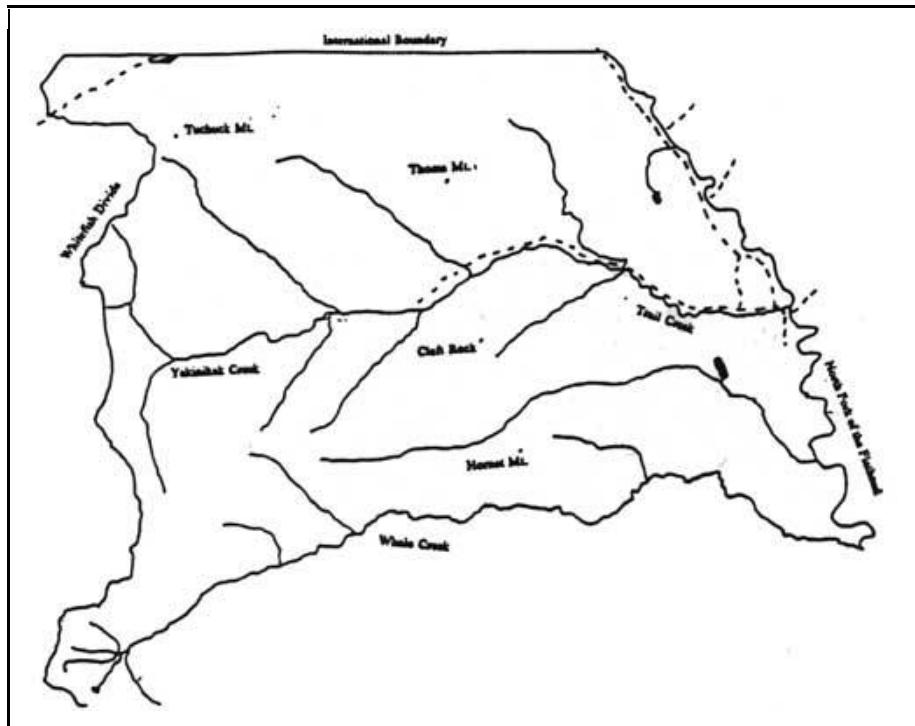


Figure 52. Trails and roads in the Trail Creek and part of the Whale Creek drainages in the North Fork, 1912.

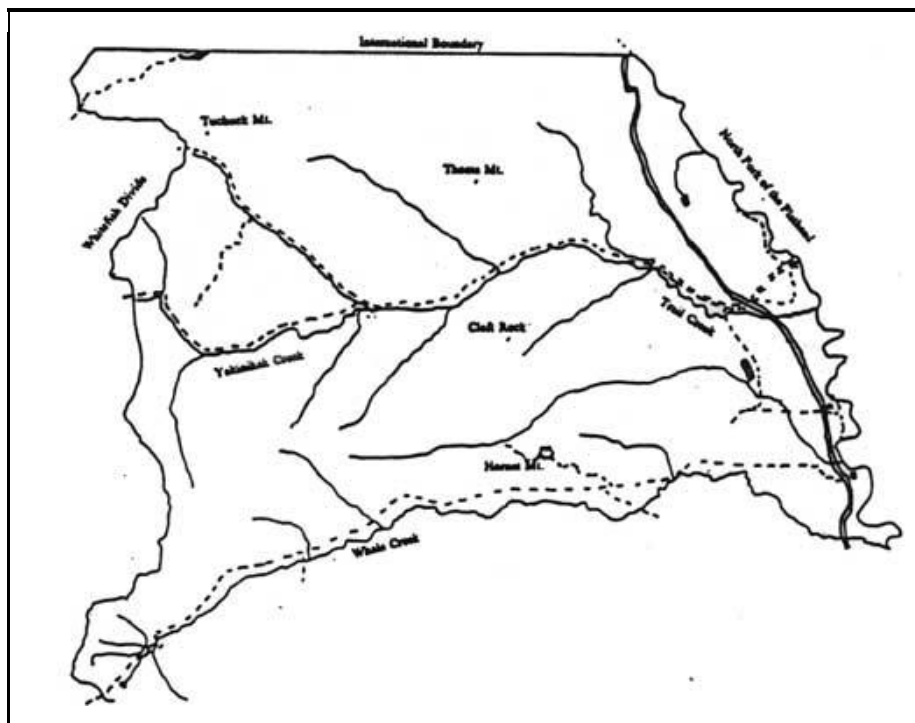
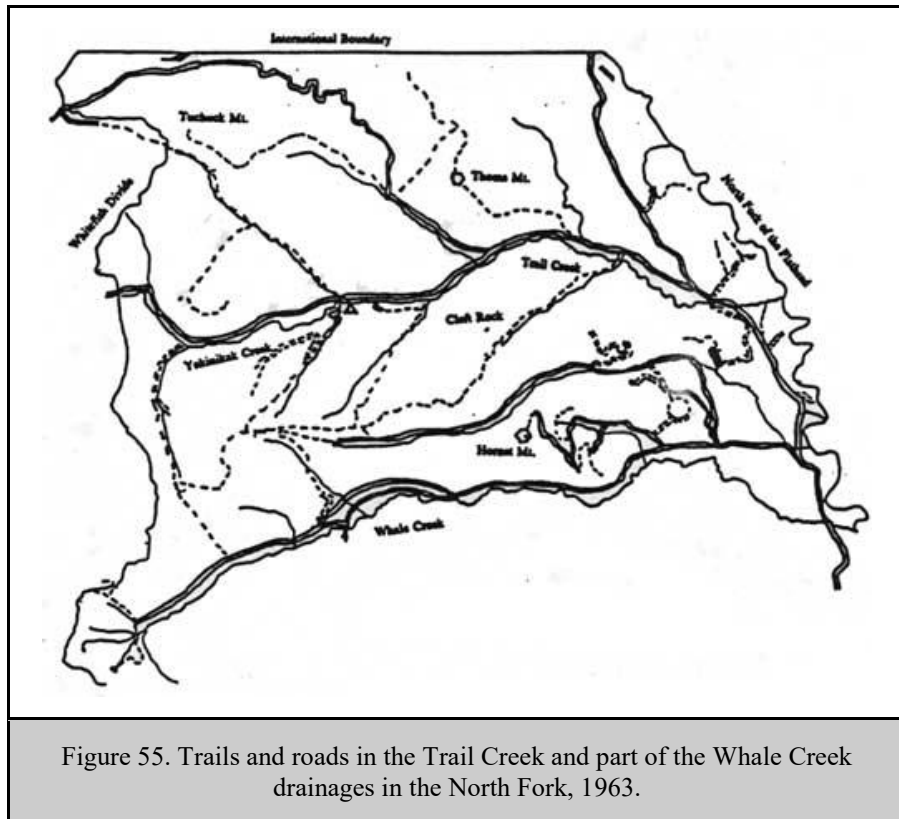
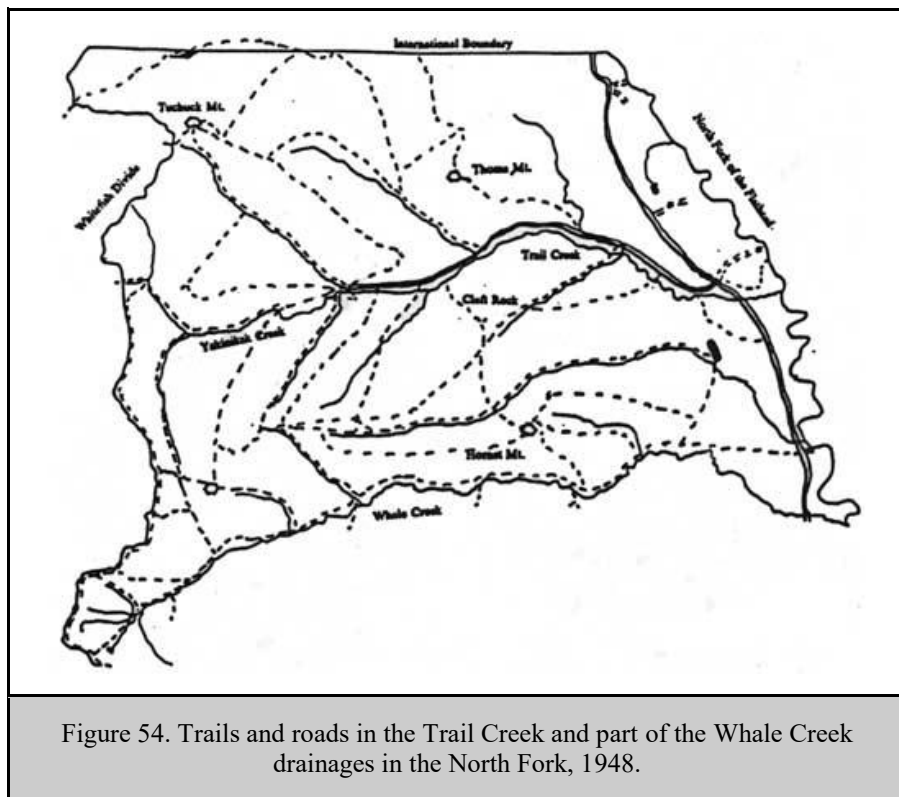


Figure 53. Trails and roads in the Trail Creek and part of the Whale Creek drainages in the North Fork, 1928.



The construction of the Hungry Horse Dam flooded the original road that followed the South Fork. Mountainside timber-hauling roads had to be substituted for the more easily maintained valley haul road. The Forest Service negotiated successfully with the U. S. Bureau of Reclamation for "replacement in kind" grades, width and curvature so that the new roads would better serve logging objectives. The main haul road on the east side of Hungry Horse reservoir was completed in 1952 and the west side road in 1954 (USDA FS "History of Engineering" 1990:86; FNF "Timber Management, Coram" 1961:39). These two roads were critical to the future development of the many miles of roads up the side drainages of the South Fork.

In 1952 Congress appropriated \$4.25 million for road construction in Region One. Forest engineers subsequently upgraded many of the older roads and built new ones. In 1959, the Flathead National Forest road system claimed 1,139.5 miles. In 1985, the road mileage had risen dramatically to 3,941 (Baker et al. 1993:225; Charles Tebbe, Jan 1960, "Basic Facts, National Forests in Montana," 1380 reports - Historical - NF Facts, RO; FNF "Forest Plan" 1985:S-20).

Between 1952 and 1955, the North Fork road was rebuilt from Canyon Creek to Big Creek, and improvements were made to Whale Creek (see Figure 56). Roads into side drainages throughout the North Fork were also constructed during this period. This work was done to aid in the logging to control the spruce bark beetle epidemic in the area. As a result, in 1955 the southern terminus of the mail route was moved from Belton to Columbia Falls (where it still is). Much of the road system in the Swan Valley was also developed to salvage insect-infested timber. The location and construction standards were low (Burnell 1980:3; FNF "Timber Management, Swan" 1960:28).



Figure 56. Fool Hen Bridge on North Fork Road (west side), 1953 (photo by W. E. Steuerwald, courtesy of USDA Forest Service, Region One, Missoula).

Region One continued to push for timber access road construction funding through the 1950s. At congressional hearings in 1959, the agency projected reconstructing 987 miles of timber roads and constructing 7,021 miles of timber roads, plus reconstructing and constructing another 179 miles of roads for other purposes (Baker et al. 1993:247).

The National Park Service built the highway from Apgar down Camas Creek to the North Fork Road in Glacier National Park in 1964. A major bridge was built across the North Fork of the Flathead River just downstream from the mouth of Camas Creek. Prior to the construction of this road, and partly in response to the proposed Glacier View Dam, the National Park Service pushed for the construction of a "loop road" that would connect West Glacier with the road to Waterton Lake via the North Fork (Burnell 1980:3; Bolle 1959:210). The loop road to Waterton Lake was never constructed to highway standards.

The technological advance that permitted the wide-scale construction of roads on national forests was the development of crawler tractors with angled blades (now known as bulldozers). During the 1920s, Forest Service challenges provided much of the initial impetus for the development of the bulldozer. Forest Service engineers conceived the idea and worked in collaboration with industry to develop the first practical bulldozer to replace the horse-drawn plow, Martin ditcher, and grader. Region One helped with the design and financing, and the new "trail builders" were tested in the northern Rockies in 1929. Major manufacturers did not produce bulldozer blades until after World War II; before then they were supplied by independent companies as separate attachments for the major brands of tractors (see Figure 57) (Young 1987:122; USDA FS "History of Engineering":25, 322, 324; Pyne 1982:43).

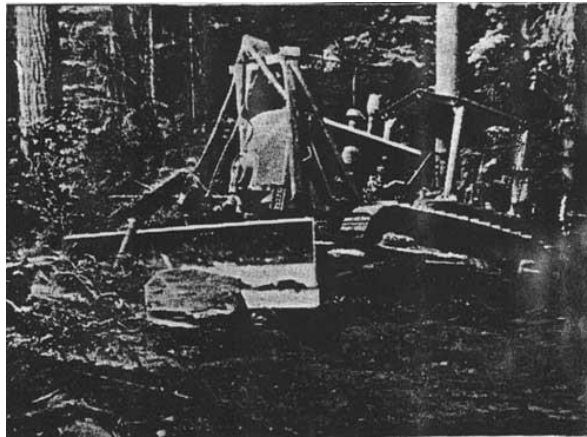


Figure 57. Bulldozer clearing brush and pushing dirt and boulder, Martin Creek access road, 1946 (photo by K. D. Swan, courtesy of USDA Forest Service, Region One, Missoula).

Important features of bulldozers were the hydraulic-powered raising and lowering of the dozer blade (replacing the cable lift) and the setting of the blade at an angle for side casting of excavated material. The Forest Service contracted for 11 of these trail builders in 1930; the agency used them primarily for building trails. The impact of the bulldozer-equipped tractor on the logging industry was profound in the 1930s (Young 1987:129-131).

COMMUNICATIONS

Introduction

The 1910 fires emphasized the need for better backcountry communications. In the following decades, the Forest Service accelerated its phone line construction program and looked into other methods of communication. By 1939, the Flathead National Forest had 1,675 miles of phone line (Shaw 1967:2). As early as the 1930s, however, the Forest Service was beginning to use radios for backcountry communications. Region One set up a high-powered short-wave radio network, but this was shut down in 1941 in favor of portable radios.

Other communications methods that the Forest Service experimented with early on were not nearly as successful as phones. The agency experimented with carrier pigeons until 1922. The heliograph was tried in many places in the 1910s, including the Flathead National Forest. The system used one or two tripods, two mirrors, and a shutter to flash a message in code, and it could reportedly be seen as far as 50 miles away (see Figure 58). Problems encountered included the need for sunlight, the confusion caused by heat waves, the necessity of someone to be watching for the signal, and the difficulties of remembering the code and adjusting the mirrors for signaling (USDA FS "Early Days" 1976:148; Gray 1982:11-13).

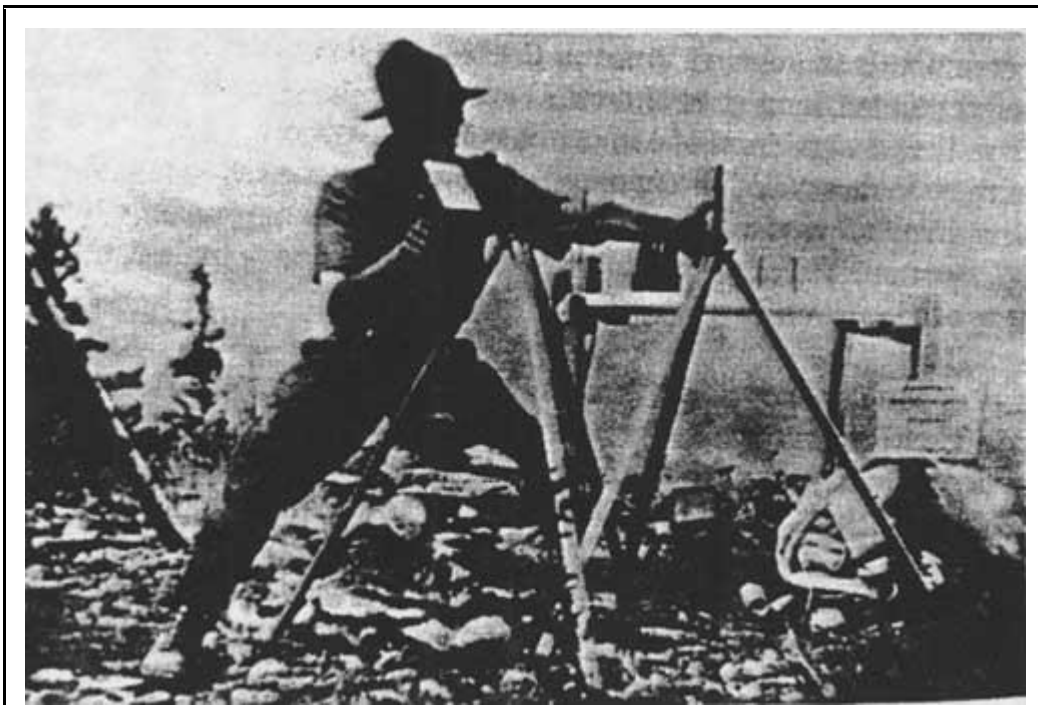


Figure 58. Harry Gisborne using a double-tripod heliograph to send a message from a high ridge on the Wenatchee National Forest, 1915 (from Hardy 1983:2).

Poignant reminders of an earlier communications era are the occasional phone-line insulators and the coils or strands of #9 telephone wire found in the woods, often leading to lookout points that no longer have lookout buildings on them. Thirty-nine miles of backcountry telephone line are still in use within the Bob Marshall Wilderness along the South Fork of the Flathead; this is probably the longest section of Forest Service phone line in working order in the country.

Telephone

Because forest rangers and guards traveled so much in the backcountry, the Forest Service had to develop methods of communicating in remote areas. The telephone was the first method of communication. The first Forest Service phone line was built in 1906 on a forest reserve in Wyoming, and the agency soon developed the unusual practice of entering into private phone contracts. Residents were allowed to use Forest Service phone lines in exchange for working as per diem fire patrol personnel. Forest Service rangers maintained and also built the private phone lines that they used (Gray 1982:8).

Settlers did not always cooperate as well as the Forest Service would have liked. For example, in 1922 a settler in Good Creek had his phone removed for abuse of the privilege, and the next year he was accused of "maliciously" cutting the line (27 April 1924 memo, Flathead 1920-23 Inspection Reports, RG 95, FRC).

Most of the Forest Service phone-related equipment for field use was either based on American Telephone and Telegraph Company equipment or was purchased from that company. At first, the Forest Service used single-wire grounded-circuit phone lines with split tree insulators. R. B. Adams of Region One designed a hand-held portable phone that could be clipped on the phone line in the woods, and a "howler" that notified crews someone was trying to reach them. In the 1910s the national forests concentrated on building main trunk and spur lines connecting ranger stations, supervisor's offices, lookouts, and guard stations. Region One had a telephone engineer by 1915, and the Telephone Handbook was published that year (Gray 1982:v, 10; Coats 1984:2, 4).

The first phone line on the Flathead National Forest was built in 1908 to connect Kalispell and Coram (there was no commercial phone service between Kalispell and Columbia Falls then). In 1910 the line was completed to Spotted Bear, and in 1912 it was extended to Big Prairie (FNF "General Report" 1918). The 39-mile phone line along the South Fork from Black Bear cabin to Danaher cabin is today probably the longest operating backcountry Forest Service phone system in the United States.

The Spotted Bear Ranger Station soon became the center of the Flathead National Forest telephone system. Five lines terminated there, converging from Swan Lake, Kalispell via Coram, Big Prairie, Three Forks, and the Spotted Bear Lookout (see Figure 59). In 1910 a phone line from Swan Lake to Spring Slide Mountain on the Swan Range was built, and two years later the line was extended up the Swan Valley. (In 1906, construction of the phone line up the Swan River was given up on account of a shortage of rangers who could be spared to do the work.) In 1913 and 1914 the first phone line along the Middle Fork was built. Officials in the newly designated Glacier National Park were making similar efforts; in 1911 the Park reported 42-1/2

miles of phone line and 9 phones (FNF "General Report" 1918; 28 November 1906, "Reports of the Section of Inspection," entry 7, box 4, RG 95, NA; Clack 1923b; Logan 1911:9).



Figure 59. Forest Service worker talking on the telephone in the Spotted Bear lookout (courtesy of Flathead National Forest, Kalispell).

The Forest Service first used a fine, insulated wire for telephone lines, but this proved to be too easily broken. For decades after, the Forest Service used No. 9 galvanized wire, mounted in insulators that broke free when a tree fell across the line. Some sites were served with "outpost wire" (steel and copper wire from World War I that could be tossed onto bushes and low limbs). Emergency wire was strung to fires, the route blazed from the fire to the nearest phone line. At the fire camp there would be a wall phone mounted in a wooden box or an iron mine phone and a ground rod with clamp (Caywood et al. 1991:38; Taylor 1986).

The Forest Service used a variety of phones, including wooden wall phones, Adams portable phones, and iron mine phones. All the phone lines were located and built along trails or roads so they would be easier to patrol and maintain. Patrol points and strategic locations that required an outside telephone used iron mine phones (see Figure 60). Temporary camps could hook into a line by twisting the phone wire around the phone line and hooking the other end to a ground (an old Army bayonet was often used as the temporary ground). Grounded lines at lookouts often had to be strung down to a stream, because the ground needed to be damp where it was grounded. New batteries were installed in the phones about once a season. The lines could have windfall limbs lying on them, or even be under 14" of snow, and still work (Taylor 1986; Coates 1984:5-6, 13).



Figure 60. Alidade stand and iron mine phone at Six Mile lookout, Flathead National Forest, ca. 1920 (courtesy of Flathead National Forest, Kalispell).

Every spring a major job on each ranger district was telephone line maintenance (see Figure 61). Some of the terrain in the Flathead National Forest presented particular challenges to phone crews. For example, in the Middle Fork the line ran through 7 miles of snowslide area on a steep south slope, averaging about one mile above the river, in a twice-burned area with only scattered trees along the rim. Line maintenance there was a real problem, as winter slides wiped out the line regularly. In 1936 the district tested a new method, after deciding that going underground was too expensive. They used long spans averaging 500' in length on poles that were hand-logged into place and then guyed. The line was hung 30-50' above the ground in the most severe slide areas. As a result, many fewer lines went down over the winter (Root 1937:34-35).



Figure 61. Forest Service worker repairing telephone line after Hay Creek fire, 1926 (courtesy of Flathead National Forest, Kalispell).

Three men were used for building a phone line. The line locator blazed the route. Another man selected and blazed the hang trees, and the third man marked which side of the hang tree the wire should go on. The 80-pound rolls of wire were then dropped along the route about every 1/4 mile. Two men strung the wire, pulling it along the route, while the third man tended the reel. Two men then climbed and trimmed the branches off the hang trees up to about 20', and the ground man put on the split tree insulators (two insulators wrapped with tie wire) and fastened them to a light rope on the climber's belt. Then they cut the trees and branches to give about 3' clearance on each side of and above the line. Solid white insulators were used until the late 1920s, but wire had to be cut to replace them and splices would hang up in them. All through the 1930s the solid white insulators were replaced with brown split tree insulators. When a tree fell onto the line, the slack in the span (ideally about 1/4 the height of the hangs) would allow the tree to fall without pulling the insulators out. In the 1940s nicopress splices came into use: these were 3-4" lead tubes that were crimped against the wire (Taylor 1981; Coates 1984: 13).

In 1937 the conversion of the grounded line to metallic line composed of two more circuits was debated. Forest supervisor Urquhart was opposed to this plan. He felt that falling trees would put metallic line out of commission easily, and that, unlike metallic circuits, "Almost any hillbilly can repair a grounded circuit in a manner which will make conversation possible." CCC labor was used to build several metallic (two-wire) lines, which had better tonal quality, but after the program ended the Forest Service had trouble maintaining the lines. Some were sold, others torn down (13 April 1938, Inspection Reports, Region 1, 1937-, RG 95, FRC; Coates 1984:122-23).

Forest Service phone lines fell out of use because of the end of the CCC program, the coming of FM radio systems, and the conversion of many commercial telephone exchanges to dial (which most Forest Service lines could not adapt to). As wages and the cost of phone lines increased due to increasing labor costs, radio became relatively cheap (Coates 1984:35-36, 41). The switch to radio released many men from the spring task of maintaining the phone lines, and unlike phones, radio could be used with aircraft and with people on the fireline.

Radio

Region One strongly favored aerial observation of fires, and R. B. "Ring Bell" Adams of the regional office made the first efforts to demonstrate the usefulness of radio on air patrols on a large scale. During the summer of 1919 the practicality of radio was demonstrated, although several problems had not yet been solved (Gray 1982:16, 25-27). The Forest Service tested the radio in air patrols in the 1920s to eliminate the need for planes to land or drop a parachute with a message.

By 1922, Adams was able to talk on a radio from the Spotted Bear Ranger Station to Missoula (a distance of 138 miles), and one time he reached Missoula from Coram (a distance of 200 miles). Although these demonstrations were impressive, by agreement with AT&T the Forest Service was required to use commercial phone lines whenever they were available. (In fact, the radio network set up between the Supervisors' Offices and Missoula may have been illegal.) (Clack 1922:9; Gray 1982:99).

In 1928 a forester near Missoula demonstrated his homemade wireless transmitter-receiver to the Chief Forester. This led to the establishment of the Forest Service Radio Laboratory in Portland, Oregon. For the next 20 years a small group of men designed highly effective portable radio sets for the use of Forest Service workers on the fireline (Gray 1982:v).

Dwight Beatty, a Forest Service employee, designed a portable radio, a semiportable radio, and a temporary or field-base station. His radios were designed to be simple to operate, rugged, and reliable. By the fall of 1930 he had convinced the Forest Service of the benefits of his radio. The radio was developed by the Forest Service because the agency's needs were different from those in other sectors, and the market was small so industry did not pursue it. Radios had several advantages for the Forest Service over phones, including lack of reliance on fixed lines, relatively private conversations, and the elimination of delays caused by a backlog of calls at the local switchboard. Also, phone lines were often destroyed by fire. Beatty's SP 1930 was economical and portable, and the early models used Morse code rather than voice transmission (Gray 1982:11, 34-35, 44-46, 108).

The Radio Lab in Portland favored low-power portable radios, but Region One instead established point-to-point contact via interforest networks, emphasizing high-power fixed-base stations and redefining semiportable radios. Common transmission distances in Region One were 50-100 miles. Men were not expected to carry radios on the fireline, but they relied instead on the more expensive system of network radio with semiportable sets in ranger stations, lookout buildings, and guard locations. During the 1930s, Region One hired ham radio operators from Missoula, Spokane, and other areas to work the radios on large fires on an emergency basis (Gray 1982:149, 156, 175; R1 PR 683, 22 January 1936).

In 1936, the Region One short-wave radio network handled 2,700 communications in 92 days. The network covered all of Montana, Idaho north of the Salmon River, and northeastern Washington. That year was the first time in the Region that an aerial observer could report his findings directly to the ground and receive instructions (R1 PR 757, 24 October 1936; R1 PR 760, 31 October 1936).

In 1941 the Washington Office ordered Region One to shut down its network radio system in favor of portable radios for fire control. World War II and new technological developments made the issue moot, however. After the war, the Region had a mix of both network and portable radios, and it was required to obtain approval from Portland before operating on its own. In 1946 the Forest Service converted to FM (Gray 1982:183, 191, 205, 207, 210).

Some areas did not receive radios until relatively late. For example, the Spotted Bear lookout did not use radios until 1947 or 1948. Radios apparently did not provide reliable service at all locations. A 1956 inspection report on the Big Prairie Ranger District mentioned the recent construction of a phone line to Pendant Lookout plus other older lines and commented, "Since radio is uncertain and scattered, it appears as if these lines are justified" (Funk 1981; 24PW1003, FNF CR).

FIRE DETECTION, SUPPRESSION, AND PREVENTION

Introduction

By the turn of the century Americans had lived through - and remembered - several wildfire complexes that caused tremendous devastation. For example, the 1871 fires in Wisconsin burned 256,000 acres and killed at least 1,000 people. The 1889 fires in Montana burned an estimated 88,020 acres, but much of the area had not yet been settled and so the effects were not so dramatic (Ensign 1889:82). The 1910 fires, in contrast, swept over approximately 3 million acres in Montana and Idaho, causing great destruction of property and loss of human lives.

Wildfires in the mountains and foothills of the northern Rockies are a regular summer occurrence, and the signs of their passage mark burn areas for many years (see Figure 62). For many Flathead National Forest employees, the work year has always been divided into "fire season" and "the rest of the year." After the 1910 fire season, the Forest Service went on the offensive, setting up fire detection points on high peaks and ridges, aerial patrols, and better transportation and communication systems.



Figure 62. South Fork road near Wounded Buck Creek, 1926, Great Northern Mountain in background (courtesy of Flathead National Forest, Kalispell).

Fire detection efforts focussed on ground patrols from the many lookout points established in the area and even from railroad speeders. Fire suppression efforts involved large numbers of men working on the firelines, smokejumpers dropping from planes into remote areas, and a variety of

firefighting techniques and tools. The Flathead National Forest cooperated with the state forests, Glacier National Park, lumber companies, and the railroads. An association of private forest landowners, the Northern Montana Forestry Association, also cooperated with the Forest Service and other agencies in detecting and fighting fires in northwestern Montana.

All these efforts at fire control resulted in dramatically reduced acreages burned by wildfire since 1910. This has led to subsequent problems with fuel build-up due to unnatural conditions, and Forest Service fire policy is now shifting away from the earlier "fight all fires at all costs" policy. The vegetation of the Forest has changed greatly due to decades of fire suppression. Above 5,000', the suppression of the frequent lightning-caused fires has changed the age class of the trees over the years. At lower elevations, frequent low-intensity fires that burned the undergrowth but did not kill the larger trees have been replaced by higher-intensity, less frequent fires that often end up replacing a ponderosa pine/western larch forest, say, with even-aged lodgepole pine. According to a Forest Service report, the Flathead National Forest today has "old-growth" conditions on only 2.8% of the Forest land below 5,000' in elevation that is capable of producing old growth. The total old growth for the Forest (including higher elevations) is 17.6% (FNF "Summary" 1992).

The evidence of historic wildfires is everywhere on the Forest, in the form of snags, changed vegetation, fire camp sites, old firelines. Fire detection has changed dramatically over the decades. Today, only a few lookouts on the Forest are regularly manned, and many have been destroyed; all that remains is often the dump, concrete pylons, phone wire, and depressions indicating locations of buildings and structures. Several fire lookouts from the historic period are still in good condition and can evoke the time when lookouts would play music to each other at night over the phone system. One of these is Hornet Lookout in the North Fork, which has been restored and is listed in the National Register of Historic Places. This log lookout with a cupola dates from 1923, and it has recently been opened to the public as a part of the cabin rental program. Three structures on Coal Ridge in the North Fork - a cabin, a lookout building on a pole tower, and a platform - are still standing and provide a unique reminder in the area of the variety of lookout structures in use over the years.

Fire Behavior and History

Over the years, the great majority of fires on the Flathead National Forest have been caused by lightning rather than by human activities. In the northern Rockies, about one lightning stroke in 25 has the characteristics needed to start a fire (Pyne 1982:9). Major fires have burned large areas of northwestern Montana. Large fires in 1910, 1919, 1926, 1929, and more recent years have replaced much of the Forest's vegetation (see Figure 63).

- 1885 Lake Blaine to Doris Mt. (7,000)
- 1889 various locations
- 1903 Crossover Mountain
- 1903 Limestone Cabin area, and Milk, Whitcomb, and Upper Twin Creek
- 1903 Hart Basin
- 1910 Schafer (120,000-150,000)

1910 Wounded Buck (2,500)
 1910 White River (100,000)
 1910 Crossover Mountain
 1910 Lost Johnny to Middle Fork
 1919 Bear Creek south of Java (30,000)
 1919 Sheep Creek to Long Creek
 1919 Sullivan Creek (17,000)
 1919 upper White River
 1919 Kah Mountain (2,500)
 1919 west side of Swan River (50,000)
 1926 Lost Johnny to Middle Fork (2,560)
 1926 North Fork (23,000)
 1926 Big Prairie
 1926 Tally Lake Ranger District
 1926 Good Creek
 1929 Half Moon (103,000)
 1929 Swan Valley
 1929 Soldier Creek
 1929 Sullivan (35,000)
 1929 Trail Creek
 1931 Lost Creek
 1934 Swan Valley
 1940 Sanko Creek
 1946 Big Lost Creek
 1958 Coal Creek (2,900)

Figure 63. List of some of the major fires in the Flathead National Forest area.
 Acres burned are given in parentheses when available (FNF "Timber
 Management, Coram":40; Wolff 1980:54; Graetz 1985:101; Arvidson 1967;
 Shaw 1967:86-87; GVRD 1981:16; 24FH41, FNF CR).

In 1899, H. B. Ayres traveled through the Flathead and Lewis & Clarke Forest Reserves reporting on their resources. In his admittedly hasty survey, he estimated that 90% of the Swan/Clearwater Valley had been burned in the past 100 years. The western slope of the Swan Range south of Swan Lake was almost bare at that time. In the Middle Fork, about 50 square miles had been burned severely and repeatedly (Ayres "Lewis & Clarke" 1900:78; Ayres "Flathead" 1900:315).

Ayres described the South Fork as having about 310 square miles burned over severely, mostly in 1889. Most fires in the valley, he felt, were set by Native Americans, other hunting parties, or prospectors. About 90% of the new stock was lodgepole pine. He estimated that about 1/3 of the

Lewis & Clarke forest reserve had been recently and severely burned, and said there was a little less than 1,000 board feet per acre of merchantable timber on the reserve (Ayres "Lewis & Clarke" 1900:15-16, 72).

Several early reports mention Native Americans setting fires, presumably to drive out game or to keep meadows open. One Kalispell resident claimed that he saw Native Americans set 25 fires in the Swan Lake area (W. H. Griffin to Gust Moser, 14 August 1900, entry 44, box 4, RG 95, FRC).

The coming of the railroads to Montana dramatically increased the number of fires all along the railroad lines. According to Ayres, in 1898 the hills along the Middle Fork were almost barren because of fires, most of which were started during the Great Northern Railway construction or from sparks, cinders, or campfires along the line since. Less than 20% of the extensive burns had restocked with any species of trees (Ayres "Lewis & Clarke" 1900:67).

Early GLO and Forest Service Fire Policy

In 1901 the Secretary of the Interior issued a statement outlining management practices for forest reserves, mentioning that "the first duty of forest officers is to protect the forest against fires." In that era, however, the only models of efficient wildland fire protection in the United States were the fire warden system in New York and the military patrol system in the national parks. Until the 1910s, fire protection on the national forests was limited by inadequate manpower and relatively poor transportation and communication facilities. The Forest Service had to rely on permittees, settlers, and railroad section gangs for temporary firefighting manpower. The equipment was minimal by today's standards; a typical early fire guard patrolling in Montana carried a canteen, a canvas water bucket, a shovel, and a carrying case with some food (Pyne 1982:231-232, 236).

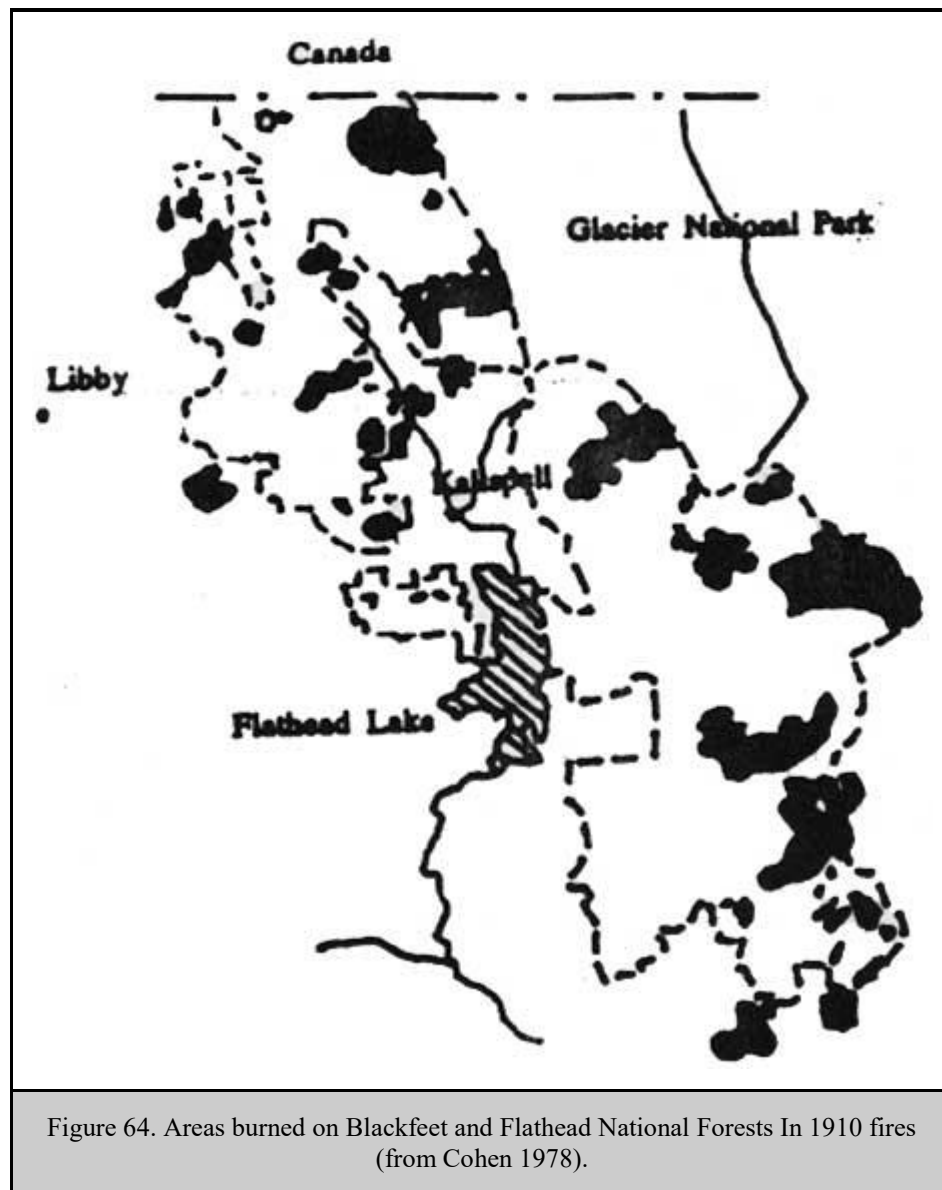
In a classic example of the Washington Office's misunderstanding of the job facing western forest rangers, the GLO stated in 1902 that supervisors and rangers would be held personally responsible for any fires they allowed to escape on their forest reserves without adequate explanation. In 1907 on the Lewis & Clark National Forest, each forest guard covered about 120,000 acres (Clack 1923a7). The 1902 letter stated:

It is not understood why forest fires should get away from the rangers, or rather why they do not find them and extinguish them more promptly. It seems reasonable that a ranger provided with a saddle horse and constantly on the move, as is his duty, should discover a fire before it gains much headway. This statement is made knowing that some of the rangers' districts are extremely large ("Sixty Years Ago" 1963:533).

In 1908 the Forest Service prepared systematic fire plans, appropriations increased available manpower, and an act allowed for deficit spending to cover the cost of fire emergencies (Pyne 1982:236). These measures were not nearly enough, however, to prepare for the 1910 fire season.

1910 Fires in the Northern Rockies

The 1910 fires laid waste to some 3 million acres of land in Idaho and Montana (see Figure 64). The devastation left behind by these fires in northern Idaho and Montana marked a turning point in Forest Service management of the national forests. As fire historian Stephen Pyne put it, "The Northern Rockies fires of 1910 left a burned swath across the memory of a generation of foresters." Fire protection immediately assumed a prominent, overwhelming role within the Forest Service (Pyne 1982:239).



The 1910 fires, fanned by hurricane-force winds, killed at least 85 people. None of these fatalities was on the Flathead fires, but four firefighters died on the nearby Cabinet National Forest. One 30-man fire crew under the supervision of ranger Peter DeGroot was trapped by flames west of Olney. The fire camp burned, but the men managed to find an escape route by

wading through the hot ashes of a burned area (Cohen 1978:v, 76; *Kalispell Bee*, 23 August 1910).

The first fire of 1910 started on the Blackfoot National Forest on April 29, and by late June fires were burning in all the Forests of Region One (Cohen 1978:11). The 1910 fires took on frightening dimensions on August 20 and 21, when gale winds (the "Big Blowup") created fast-moving crown fires. According to Pyne:

Winds felled trees as if they were blades of grass; darkness covered the land; firewhirls danced across the blackened skies like an aurora borealis from hell; the air was electric with tension, as if the earth itself were ready to explode into flame. And everywhere people heard the roar, like a thousand trains crossing a thousand steel trestles (Pyne 1982:246).

In 1910, 65% of the fires were caused by railroad operations, the rest by slash burning, lightning, campers, prospectors, and perhaps arsonists. Only one lumber company in Flathead County helped fight the fires. Glacier National Park estimated that as many as 75% of the fires in the Park were set by "hoboes and others who want work" (Moon 1991:42, 44; Pyne 1982:243).

The most damage, however, resulted from fires that started in remote locations, ignited by lightning (Pyne 1982:243). This was certainly the case in the Flathead and Blackfoot National Forests in 1910. Fires that started in low ground, along railroads and trails, or in inhabited areas were easier to control promptly. Other fires, mostly started by lightning, could not be reached quickly, and when the wind began to blow those fires "swept down in solid fronts miles in extent and destroyed the work of weeks of fighting." One writer described his frustration at fighting the fires in 1910 in the Swan Valley:

A trail must either be cut out to a point near enough to reach the fire from camp or the horses taken slowly and painfully through country covered with tangles of down timber and dense thickets, with the risk that in case the fire got well started there might be some difficulty in getting out again. Meanwhile the fire is gaining headway, and the ranger finds on reaching it that he can make no impression on it and needs 20 to 50 men to control it. He proceeds to the nearest telephone station and the men are sent in from some town, or in rare circumstances they may be recruited from settlers nearby. Their beds, provisions and cooking outfit are packed in 20 to 75 miles on animals hired for the purpose, and after a delay of from 3 to 7 days they reach the fire.

By this time it is so large that they cannot entirely subdue it (Chapman 1910:638).

Fire crews on the national forests were supplemented with men from Missoula, Spokane, and Butte until the supply of floating labor had been exhausted. Kalispell's two militia companies were under the jurisdiction of the state forester. The Forest Service also received help from the regular Army. Three companies were dispatched to the Flathead National Forest, others to the Coeur d'Alene and Lolo National Forests. They worked on fires along the South Fork, the Middle Fork (Stanton Lake area), and in Glacier National Park. They provided medical supplies, surgeons, and pack trains as well as firefighters. The Region had no reserve of fire equipment

then, so new equipment was purchased as crews were sent out until the supplies in many stores were exhausted (*Kalispell Bee*, 16 and 23 August 1910; Pyne 1982:244; Koch ca. 1942:2).

Local settlers did help fight the 1910 fires. In the North Fork, for example, Forest Service ranger Frank Liebig was able to recruit virtually all the settlers to help with a fire in the McGee Meadow area, but even so half a dozen of them lost their homes and possessions to fire. He also received help from the Army and the militia. That particular fire was finally put out by rain (Vaught Papers, 1/L).

Many forest rangers in the Flathead area talked about the shortage of men, horses, and supplies in the 1910 fires. For example, R. L. Woesner was assigned to an area near Stryker and faced continual fires along the railroad tracks. He was sent about 60 men and then a company of soldiers from Fort Harrison, but the crew only had two old government pack horses with sprung knees to move their fire camp, located about five miles from a road (O. Johnson 1950:266).

Glacier National Park was created in 1910 and its new administrators immediately faced the disastrous fire season of that summer. Forest Service rangers continued to work in the Park during that summer. In mid-July firefighters from the Flathead and Blackfeet National Forests were sent to help the Park, which had no money appropriated to protect its forests from fires. Nineteen thousand acres burned in the Park that summer (Buchholtz 1976b:26; Cohen 1978:11-12).

Firefighters in the Park faced the same difficulties of transportation, communication, and shortage of supplies as did those in the Forest. In July of 1910, forest ranger Liebig spotted two fires in the new Park. According to his own account, he:

marked the fires down as close as I could and thence went back to the Ranger camp on the head of Lake McDonald [from Lincoln Peak], had just time to send a message with the big boat to Sup. Haines in Kalispell to inform him of the fire in and around Harrison Lake, thence, had a bite to eat, and went to the pasture on Johns' Lake and got two more horses (Liebig 1910:9).

Sometimes there was conflict over jurisdiction, and the interagency spirit of cooperation faded. When a fire in the Essex area was reported to the forest ranger at Essex, he remarked that it was "out of his jurisdiction"; it took several days before any effort was made to put that fire out (Logan 1911).

In August of 1910, Supervisor F. N. Haines of the Blackfeet National Forest was sounding close to despair:

We have made a hard fight, but it looks now like we have lost. There is absolutely no show to even control the fires, and the best we can do is to check them here and there as best we can and wait for rain (Elwood 1980:150).

Rain and cooler temperatures ended the disastrous fire season of 1910. As late as February of 1911 snags were still smoking from the previous season, sticking up through 5' of snow (USDA FS "Early Days" 1962:195).

The 1910 fires destroyed an estimated 7-8 billion feet of marketable timber. Subsequent timber management consisted of fire salvage sales (although much of the burned timber was too remote to log), replanting burned sites, control of insect and disease outbreaks, reducing erosion, and snag felling as a fuel modification measure. Many surveys had to be redone because the witness trees had burned. Subsequent efforts to develop the woods to prevent future similar destruction made the Forest Service, particularly Region One, a national leader in fire protection (Pyne 1982:249-250; Koch ca. 1942:22-23).

A 1910 Forest Service report stated:

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 (quoted in Baker et al. 1993:224).

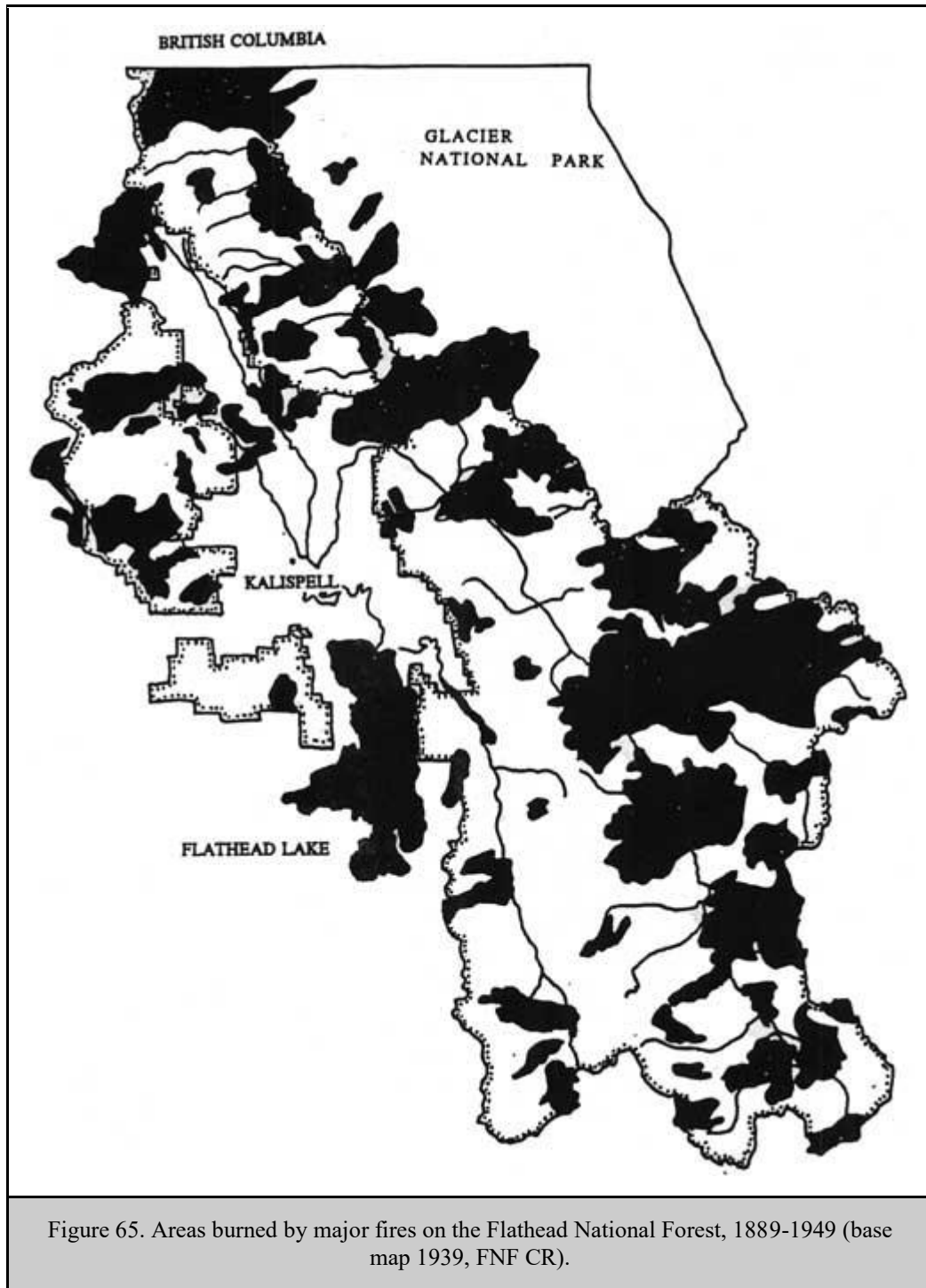
Fear of an imminent timber famine, heightened by the 1910 fires, led the Forest Service to push for more funding and support for its fire control program. The needs of fire detection and suppression (roads, trails, telephones, etc.) were a large factor in settling the remote mountainous areas of the northern Rockies. The winter following the 1910 fires, a fire plan was developed, and it became policy on the Flathead National Forest that all forest guards were to be used primarily on fire protection work in July and August (Clack 1923b).

Another result of the 1910 fires were a number of technological innovations, some of which are still in use. The new equipment included the Osborne fire finder, the Pulaski (combination ax and mattock), and a railroad speeder car equipped with a bicycle seat, pedals, and rubber tires (Caywood et al. 1991:28).

Because of increased efforts at fire detection and suppression, the acreage burned in Montana declined dramatically after 1910. Even so, much of the Flathead National Forest burned between 1889 and 1949 (see Figure 65). In the 1940s, the amount burned was only 3% of that burned in the 1910s, as shown below:

1910-1919:	1,834,000 acres
1920-1929:	364,000
1930-1939:	150,000
1940-1949:	53,000

(Montana Conservation Council 1954: 10)



Fire Detection

In the early years of the forest reserves/national forests, fire patrols were woefully inadequate. For example, forest ranger George Rhodes at Belton wrote to his supervisor in Ovando in 1904:

I will keep a very sharp look for fires I assure you[.] as there is only about 12 miles of my district in which I can use a Saddle Horse at present I have to make the trip on foot from Belton to Nyack[.] there is a Trail along the Rail Road but it has not been open for years and it will require a good lot of work to open it up but it can be done when there is no danger from Fire (Elsethagen, FNF Class).

Every means possible for fire patrol was tried. Even boats on Flathead Lake and Tally Lake (and perhaps others) were used for fire patrol and for smokechasing, but this was a slow method and the fire guard could not go out in lightning storms due to rough water. On the east side of Flathead Lake, the fire guard stationed at Upper Beardance for many years would travel to various observation points in a Model A Ford coupe. Boys even patrolled in buggies; Joe Opalka was hired in 1917 at the age of 15 to patrol the road between Bad Rock Canyon and Coram by horseback or by horse and buggy for \$4.00 a day (FNF Lands; Fred Hartson interview, 23 December 1991, TLRD; Robbin 1985:113-114; Opalka reminiscences, FNF CR).

The most effective method of fire patrol along the Middle Fork was the railroad speeder, used by forest rangers and guards in the area for many years. In 1906, Forest Service inspector Elers Koch commented that the speeder was "an unqualified success. One man on a speeder can patrol several times the area that he could on foot or horseback, and can have his tools and camp equipment with him at all times" (see Figure 66) (28 November 1906, "Reports of the Section of Inspection, entry 7, box 4, RG 95, FRC).

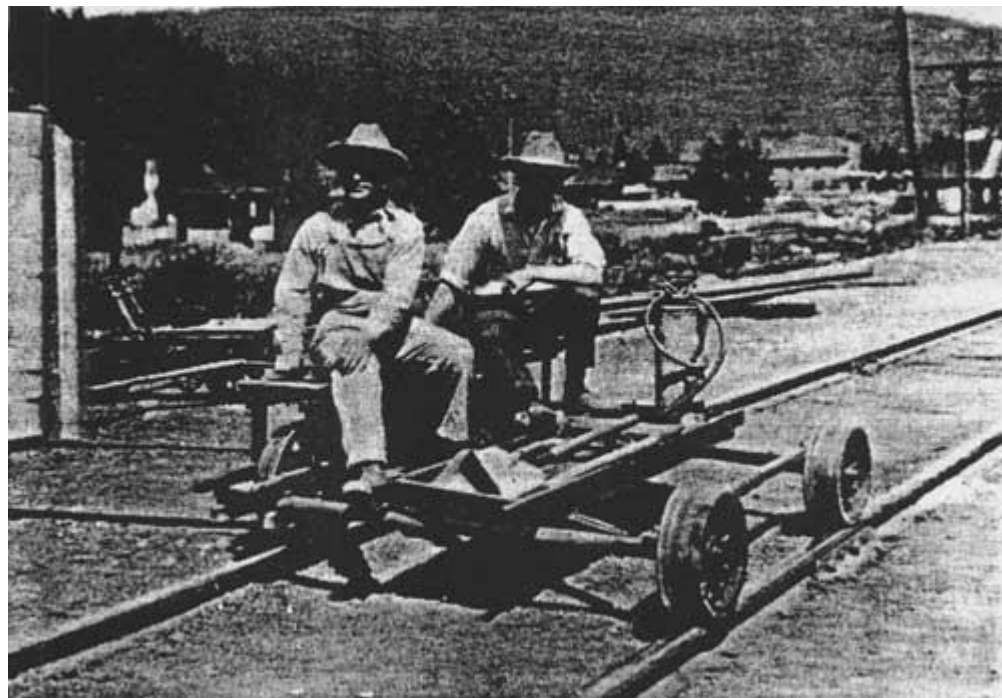


Figure 66. Railroad speeder in use by Forest Service workers near Warland, Montana, 1921 (photo by K. D. Swan, courtesy of USDA Forest Service, Regional Office, Missoula).

The established method of fire patrol in the fall of 1907 was to patrol the trails, roads, ridges, and railroad lines and to station men as near as possible to the bases of high peaks so they could climb the mountains each day. Six forest guards worked in the South Fork from Coram to Big Prairie. They patrolled the main South Fork trail looking for fire "and incidentally cutting out fallen timber." In a meeting that fall everyone agreed that this system did not work because guards needed to climb to a high point each day. So, beginning in 1908 men were stationed where they could climb to lookout points, sometimes moving between two different peaks on alternate days (Clack 1923a:7; Clack 1923b).

In 1909 the Lewis & Clark National Forest was divided into eight ranger districts, and each was allotted about three men. Forest officials felt they were getting prepared for any fire situation. But in 1910, with virtually no communication system, this force of men proved to be "totally inadequate." On the Bunker Creek fire in 1910, for example, the ranger augmented his force of three men by riding to Coram for 10 more men, but by the time they got to the fire they needed 100 men (Clack 1923b).

At a supervisors' meeting held in 1910 (before that year's disastrous fire season), the men discussed selecting lookout points and patrol routes and coordinating these between ranger districts and Forests to aid in locating fires. Also discussed were the ideas of building "shot gun" trails of minimal standard, just enough for pack horses to travel, and building temporary phone lines to the lookout points so that patrolmen could get help more easily in case of fire. They also planned to distribute tool caches throughout the forests for fire use and to provide men in remote districts with supplies and food so they did not have to leave the Forest to obtain needed supplies. The main objection to putting men on lookout points in 1910 was "the difficulty of securing a man who would put up with the monotony and isolation incident to such a position." Region One supervisors thought it would be best to alternate the lookout men with those doing ridge and trail patrol work ("Report of Supervisors' Meeting, 3/21-26/1910," 1360 meetings - Historical - Early Supervisor Meetings, RO).

Some early Flathead forest rangers promoted the idea of lookouts and lookout points before their supervisors approved of the idea. According to Joe Eastland, an early forest ranger along the Whitefish Divide, a Sir J. C. Davis came to the national forest from London to collect seeds of ponderosa pine, white pine, and alpine larch. He told Eastland about the fire lookouts in Scotland and England, and Eastland subsequently tried to convince forest officials of the advantages of posting lookouts along the Whitefish Range. Frank Liebig, stationed in the Lake McDonald area beginning in 1902, reported climbing Mount Stanton to look for fires and being kidded by his fellow workers for doing so (O. Johnson 1954:12-14; Vaught Papers 1/L).

In 1912, Montana forest rangers located fires with field glasses, plotted them on a map, and then phoned other guards. By that time the Forest Service also had "watch stations" (or lookout points) from which signals could be made by waving flags, flashing the sun's rays from mirrors, or using gasoline torches. Some were provided with a railed platform, perhaps enclosed. The "forest watchers" were provided with field glasses and a signal mirror (probably a heliograph) and were located so they could be seen from a ranger or guard station, where a ranger was "continually on duty during the day to look for signals." These watch stations reportedly had a range of 25-50 miles (Willey 1912:57).

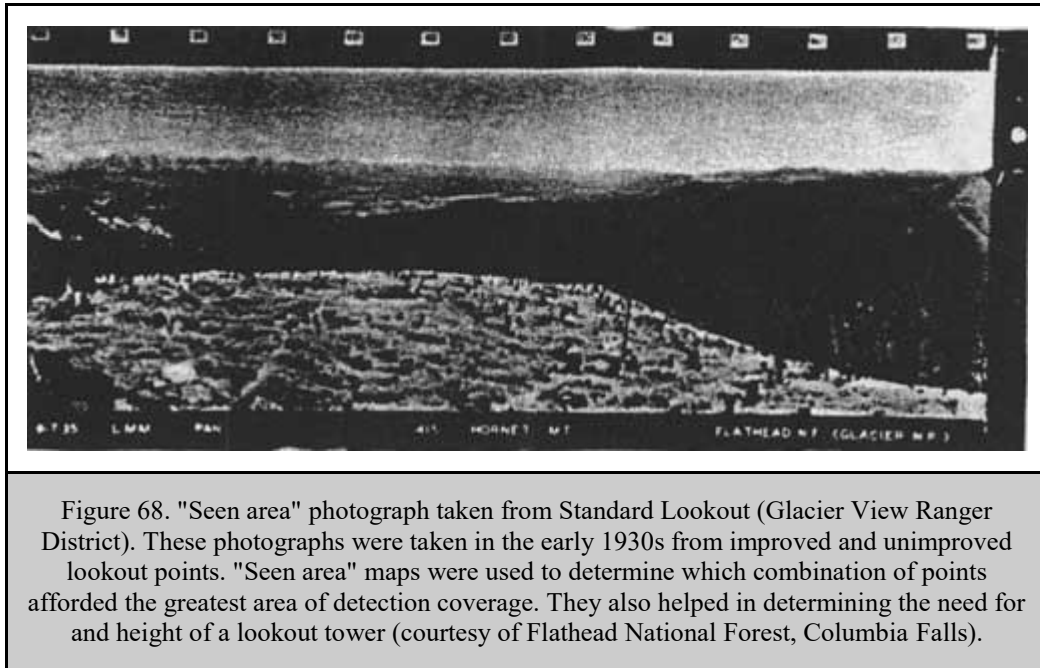
In the early years, lookout points had no improvements built on them. The lookout man would camp in the nearest sheltered place below the lookout point and would hike up to make his observations. Sometimes the lookout man would travel between two different points to observe more area; he would then be following a patrol route, with special emphasis on high-danger areas such as the railroad right-of-way, camp sites, lightning zones, etc. (USDA FS "Early Days" 1962:1; "Report on Felix Creek Fire, 1914" 1914 Fires Flathead, RO:4).

The difficulty of fire detection and fire control in the early 1910s is exemplified by the efforts to control the Felix Creek fire in 1914 on the Flathead National Forest. In that year, the few fire guards scattered throughout the forest were equipped with a map of the Ranger District, a compass, and a pair of field glasses. No map boards or alidades had yet been set up, and the few lookout points had no improvements. A lookout stationed on Mount Aeneas first reported the Felix Creek fire to the Echo Ranger Station by phone. The ranger then rode 4 miles to the nearest phone to call the Supervisor's Office, which called the ranger at Coram because they could not reach the ranger on the lower South Fork. Coram got the message through to the guard at Riverside at suppertime, and the guard found the ranger at a campsite. At about 8 p.m. the guard at Coal Banks was called and told to go to the fire. The guard could not find the fire, but a trapper reported the location. Sixty hours elapsed between the time the first men were ordered and any actual firefighting began. All food for the fire camps was ordered by phone through the Supervisor's Office (see Figure 67). Cars were rented in Kalispell to rush supplies as close as possible to the fire camp, and local merchants provided supplies based on emergency lists they had been given at the beginning of the fire season ("Report on Felix Creek Fire, 1914" 1914 Fires Flathead, RO:4).

100 lbs. flour	10 lbs. brown sugar
5 lbs. baking powder	5 lbs. dried peaches
10 pounds salt	5 lbs. dried apples
2 5-cent packages yeast	5 lbs. dried prunes
1 lb. soda	5 lbs. raisins
10 lbs. cornmeal	12 lbs. canned butter
20 lbs. rice	1 gallon vinegar
80 lbs. ham	12 cakes ivory soap
20 lbs. bacon	2 dozen candles
25 lbs. potatoes	0.5 pint vanilla extract
10 lbs. onions	0.5 pint lemon extract
20 lbs. beans	0.25 lb. pepper
10 lbs. coffee	0.25 lb. mustard
1 lb. tea	15 lbs. lard
48 cans milk	10 lbs. oatmeal
40 lbs. gran. sugar	5 boxes matches

Figure 67. List of emergency rations ordered by the Flathead National Forest during the 1914 fire season. These figures are the supplies ordered for a 10-man crew for 10 days. The total weight was reported to be 575 pounds ("Report on Felix Creek Fire, 1/14/1915," 1914 - Fires - Flathead, RO:12).

Lookouts were located so as to maximize the "seen area" of the forest. In 1929, 15% of the fires on the Flathead National Forest started in unseen areas (35% of the forest was considered unseen at that time) (see Figure 68) (Hornby 1931:5).



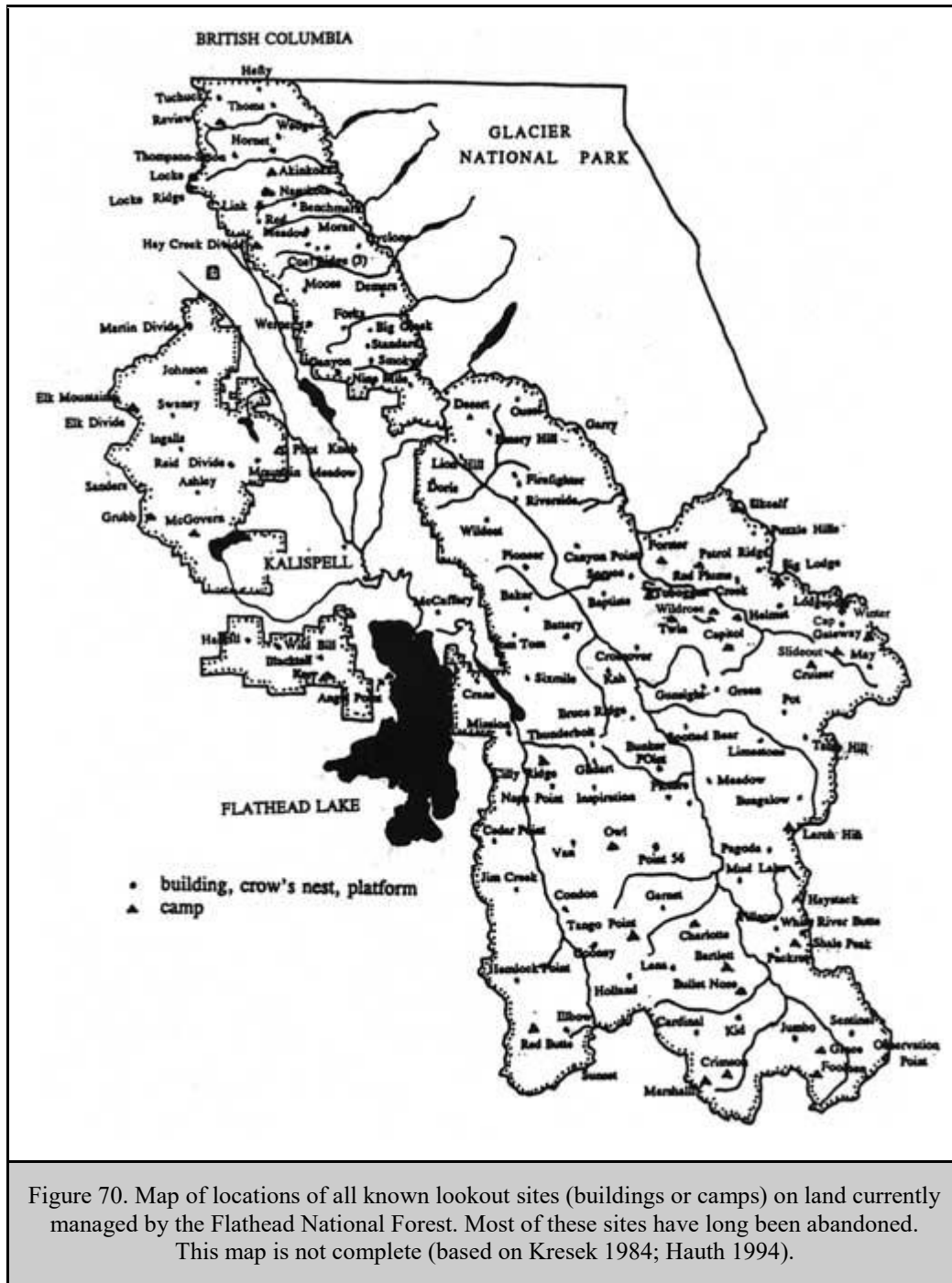
Crow's nest lookouts were an early, relatively easy-to-build form of lookout. They were built all over the Flathead National Forest, from Yellow Bay Mountain on Flathead Lake to Reid Divide in the Stillwater area. The observatory was a platform accessed by a ladder up a tree. "Lookout trees" were used into the 1930s. On the Tally Lake ranger district, for example, in 1930 they were spaced 1-1/2 miles apart and featured 12" spikes driven into either side to act as a ladder for smokechasers, with climbing branches above. Sometimes three or four trees growing close together would support a platform and map stand, but generally lookout trees were single trees (Robbin 1985:114; Taylor 1981; Taylor 1986).

The first Forest Service lookout was built on the Cabinet National Forest. The earliest lookouts were small, crude log cabins used to house the men stationed there. If no suitable trees were available for a crow's nest, the men built a tower out of poles (Caywood et al. 1991:28; USDA FS "Early Days" 1962:2). The 10' x 10' lookout platform on Coal Ridge in the North Fork is one of the few lookout platforms still standing in Region One.

The first permanent lookout building on the Flathead National Forest was built on Spotted Bear Mountain in 1914 (this was replaced in 1933) (see Figure 69). The Forest Service did not have enough funds for more than a few high lookout cabins until the 1920s (trails, roads, and phone lines had a higher priority in the early years). The Forest built more and more lookouts, especially during the 1930s, until in 1939 there were 147 lookouts and towers on the Flathead National Forest (see Figure 70). By 1930, approximately 800 peaks or points were occupied in Region One (Caywood et al. 1991:30, 38; "Transportation - Fire" 1931:13; Shaw 1967:7; FNF "Informational Report" 1939).



Figure 69. Jim Creek lookout, 1923. This lookout was identical in style to the original Spotted Bear lookout, built in 1914 (courtesy of USDA Forest Service, Region One, Missoula).



The construction of permanent buildings on lookout points enabled the Forest Service to attract better men to the job. As Flathead National Forest employee J. G. McDonnell commented, with the new lookouts "A man can observe the area he is responsible for even while preparing his meals, and the necessity of first routing out the ants and rodents, and running out during the process to pile a few more rocks on the tent to keep it from blowing away is done with" (McDonnell 1937:36).

The first standard Forest Service lookout was the D-6 pyramidal-roofed cabin with cupola, developed in 1915 and popular until the mid-1920s. In 1922 the Flathead National Forest developed the D-1 cupola house, designed by Dwight L. Beatty, which was 14' x 14' instead of 12' x 12', built of logs, and had a gabled roof (the lookout building on Hornet Mountain, built in 1923 and still standing, is a good example of this design) (see Figure 71) (Caywood et al. 1991:107; Kresek 1984:11-12).



Figure 71. Hornet Mountain lookout, 1923. The log cabin with the cupola was new and soon replaced the earlier platform and cabin shown in the photo (courtesy of USDA Forest Service, Region One, Missoula).

Clyde Fickes and architects at the Regional office were assigned the job of designing a tower and lookout house combination that would allow a lookout to be at his post 24 hours a day. Plans developed by other Forest Service regions were too expensive for Region One to use. In the spring of 1928 Fickes built a sample 12' x 12' lookout with a cupola on the Lolo National Forest. The materials weighed approximately 6,000 pounds (if fir and pine were used), and it took 25 man-days to build. It was designed to be built by a couple of men who could read instructions and who had a hammer, screwdriver, and level ("New Type Lookout" 1928:14; Fickes 1973:83-84).

Fickes developed standard plans for a lookout building with a gable roof and windows on all sides known as the L-4 (see Figure 72). The popular model offered improved efficiency because the lookout did not have to climb up and down the ladder to the cupola. The earlier versions have gabled roofs, those dating from 1933-53 have hipped roofs. In 1930, the Forest Service invited bids for enough lumber to build 100 L-4 lookout houses, which would be cut and bundled for packing in Spokane and delivered from the Spokane warehouse. The pre-cut cabs generally cost \$500 (the towers were built from pole cut on the site). The Superior Building Company of

Columbia Falls began providing the Flathead National Forest with pre-cut materials for 14' x 14' L-4 lookouts in 1929. In 1930 three were assembled on the Forest (Bruce Ridge, Desert Mountain, and Ingalls Mountain), and they reportedly could be set up by two men in just three or four days. The company's lookouts were assembled almost entirely without nails, similar to the ready-cut garages and small houses the company provided for the housing market (USDA FS "Early Days" 1976:3; "Lookout Houses" 1930:9; Fickes 1973:84; "New Ready-Cut" 1930:10; "New Ready-Cut" 1929:2).



Figure 72. L-4-style lookout on Flathead National Forest peak (photo by Toussaint Jones, courtesy of Flathead National Forest).

Between 1934 and 1941 Region One also used a prefabricated 7' square cab with sheet metal walls on steel towers. The lookout did not live in the building; he or she used it for observations only. Other standard plans modified the size and design of the L-4 slightly. Heavy galvanized steel towers were introduced in the 1930s; Aermotor of Chicago, a windmill company, was the main provider. Since 1953 standard Region One lookouts have been built with flat roofs, and road access has allowed many to have concrete or cinder block foundations. Other Forest Service regions and other agencies developed their own designs (Caywood et al. 1991:107; Kresek 1984:11-12).

Some lookouts were built in response to bad fire years, such as the Holland Lookout built after a 1919 fire complex burned approximately 50,000 acres in the Swan Valley. In 1920, however, a Forest Service inspector reported that the fire detection system on the Flathead National Forest was still "casual." Not one smokechaser on the South Fork had a fire pack ready to go, he wrote. Some of the maps at lookouts could not be permanently oriented, men did not know the country

or the locations of other lookouts, fire tools were dull, and some "seen areas" had no maps available (Wolff 1980:54; 19 July 1920, Flathead 1920-23 Inspection Reports, RG 95, FRC).

The Forest Service provided the food for the lookouts, almost all of which had to be nonperishable. A typical supply included: flour, baking powder, salt, sugar, coffee, beans, rice, dried apricots, prunes, raisins, ham, bacon, canned corned beef, dehydrated potatoes, canned corn, tomatoes, milk, and syrup. The later addition of canned fruit and apple butter was considered "high living." Lookouts routinely supplemented their diet with fish and huckleberries, when accessible, and with grouse (USDA FS "Early Days" 1962:2).

Most of the rations at a lookout were packed in small cans. Lookouts considered it amusing to post a fire slogan reading "Stay With It 'Til It's Out" inside the outhouse door. In the early 1930s lookout rations were packed in wooden boxes, each holding about 125 pounds of food, in units for 30, 45, or 60 man days. The packer supplemented these pre-packed rations with potatoes, bacon, eggs, and onions just before leaving for the lookout. Tally Lake lookout Norm Schappacher recalled that in the 1930s "There was this brown bread that came in a can - we'd usually throw it at the bears. But the butter in cans, you could eat almost anything with that butter in it" (Howard 1984; Taylor 1981; "Lightning" 1987).

In the mid-1930s it was realized that all lookouts came out of their towers at about the same time to cook meals, during which time there were practically no observations being made. So, each lookout was then assigned a 15-minute intensive observation period per hour, staggered to keep the area under constant observation. Lookouts had to record lightning strikes day or night, and they were not paid overtime (Taylor 1981).

Lookouts were required to be within hearing distance of the phone during the day. If they needed to haul water, they would do this before 6 a.m. in a 5-gallon water bag with shoulder straps. The only reasons a lookout was allowed to leave his post were a bad toothache or a death in the family. Lookouts received \$70 a month in 1930 and were on the point 24 hours a day between June 15 and September 15. They reported to the smokechaser or ranger station three times a day. A packer would bring mail and supplies just once or twice a summer. The days could quickly become routine in a slow fire season. A typical diary entry of a lookout on the Flathead is as follows: "Saw a bear this morning. Washed clothes this afternoon" (Taylor 1986; Taylor 1981; USDA FS "Early Days" 1962:2).

The life of a lookout was lonely at best. With good communication by phone, many dispatchers opened the lines at night so that the lookouts could talk to each other with their phones hung around their necks. On the Big River Ranger District (the Middle Fork), playing checkers over the phone was a favorite evening pastime among lookouts. In the North Fork, men would sing or play music over the open line (harmonicas were popular, even a trumpet); one man was an excellent yodeler. In the Star Meadow area, half a dozen lookouts would have "bull sessions" together over the phone lines in the evenings (Howard 1939:7; Yenne 1983:30; Anne Clark, "It's Lonely at the Top," *Daily Inter Lake*, n.d., FNF CR; Taylor 1986).

John Frohlicher, who worked as a smokechaser five summers on the Flathead National Forest in the early 1920s, advised his brother Steven, a new lookout on the Spotted Bear Ranger District:

take time to fix a comfortable camp. Bear grass cut and dried makes a fine bed; it won't take much ingenuity to contrive an icebox in your spring hole to keep butter in; and build a good chair. Better build two, so you'll have one to sit in when the ranger comes to see you (Frohlicher 1929:9).

The first firefinder was a compass. The alidade was soon developed, an improvement because it gave a longer sight axis. The alidade would be mounted over a map board, allowing the lookout to give relatively accurate readings of the direction of a fire to the dispatcher. The mapboard and firefinder evolved through the Koch Board and the Bosworth Firefinder to the Osborne Firefinder (see Figure 73). All these firefinders allowed one to determine the direction of a fire, not the distance to the fire or its location. Dispatchers could pin down the location of a fire if several lookouts observed the same smoke; the intersection of the lines from each lookout drawn on a map would mark the location (Taylor 1986).



Figure 73. Assistant supervisor C. J. Hash taking a reading on Salmon lookout, 1926 (courtesy of Flathead National Forest, Kalispell).

Lookouts sometimes confused fog, reflections from ponds, etc., with smoke from fires. In 1941, for example, the lookout on Puzzle Mountain thought he saw a fire and traveled 9 miles to the site. Instead, he found a shepherd's camp with a Kimmel stove, and about 3,000 sheep in the meadow (Kresek 1984:362).

Until about 1930 many lookouts were manned by two men: a lookout who spotted the smoke and a smokechaser who hiked to the fire and put it out. After 1930 on the Flathead National Forest men were generally stationed alone on a lookout. They would report the fire, go to the fire to begin suppression efforts, and return to their station only after help had arrived (Anne Clark, "It's Lonely at the Top," *Daily Inter Lake*, n.d., FNF CR).

A smokechaser's "rag camp" included a 10' x 12' tent, a Kimmel stove, quilted bedding known as a sougan, and food. They would use a phone to talk with the lookout and would wait for calls reporting fire. Until the early 1930s, lookouts did not have lightning rods. The men were supposed to go out in a tent during a lightning storm so the Forest Service would not be liable for them, while watching for lightning strikes at the same time. These tent camps did not provide much shelter from storms. Nevertheless, those staying in tents had to pay \$5 a month for quarters (Magone 1970; Anne Clark, "It's Lonely at the Top," *Daily Inter Lake* n.d., FNF CR; Howard 1984).

Smokechasers were on call, night or day, ready to leave within five minutes of receiving a report of a fire. The smokechaser was responsible for Class A fires, those under 1/4 acre in size. He was required to stay out three days; if a lookout called back ten minutes later to say it was a false alarm, there was no way to prevent the smokechaser from a three-day search. After 1940 smokechasers were no longer sent out alone to fires because of safety concerns. Sometimes it could be quite difficult to find a fire on the ground. At least one ranger station on the Flathead kept some old-timers around, trappers who "knew the area like a book," to lead young men to a fire. When the smokechaser found the fire, he noted the time, put his fire pack in a safe place, and knocked down the flames with dirt and cut the limbs hanging into the fire area. Eventually, it successful, he would encircle the fire with a fire line. Then he "mopped up," crawling on his hands and knees feeling the ground for hot spots and checking the area for spot fires. When the smokechaser had finished mopping up, according to Pat Taylor, the ground looked like a "cultivated garden." He then made out his report, watched for smokes until 4 p.m. to make sure the fire was out, and then blazed a line to the nearest trail (Taylor 1986; Helseth 1981; Magone 1970).

The smokechaser's 35-pound pack in the 1920s contained a compass, map, pulaski, shovel, file, whetstone, and three days' emergency rations. The rations were packed in cloth bags and typically contained hardtack left over from World War I, a can of bacon, a can of cheese, rice, a can of milk, oatmeal, and coffee. After World War II smokechasers ate Army K rations. There was no bedding because the men were supposed to keep working until the fire was out. Smokechasers cooked their food on their shovel blade. They made a palouser to use for working at night (this was a lard bucket with a candle and a wire handle that cast a light about 8') (Magone 1970; Taylor 1981; Taylor 1986).

Flathead National Forest lookout Steven Frohlicher was the lookout on Bruce Ridge in 1930. Charles Hash, assistant forest supervisor, spent the night in Frohlicher's tent on an inspection trip. The rattling of the canvas fly and the squealing of the ropes in the wind kept Hash awake. In the morning, "He came out of bed swearing, and he could make a mule-skinner turn green with envy: Any God-damned outfit that would ask a man to live and work in places like this! I'm gonna raise Hell until we get some cabins on these peaks!" Soon a ready-cut lookout from Columbia Falls was delivered to the lookout point by mules. This was the first Superior Building Company lookout on the Forest (Frohlicher 1986:78-81).

Many of the lookouts did not have #9 wire phone lines. Instead, outpost wire was strung to them in the spring and picked up in the fall. When Roy Davis arrived at Tuchuck Mountain in 1930, the first season it was used as a lookout, the trail crew had built a phone line to the point but there were no other improvements. Davis built a map and alidade stand, then hooked up the portable telephone. He next cut and hauled up a ridge pole and tent supports. Later that summer pre-cut lumber for a lookout building and blueprints arrived, and two men came up to build it. Davis spent one night in the new lookout building before heading down the mountain at the end of the season (Howard 1984; Davis 1980).

Obtaining water for drinking and washing was always a concern on a lookout, which was usually a fair distance from a water source. Some of the water sources, a spring or an intermittent creek, were a couple of miles down the mountain. Melted snow was often used for wash water to save hauling the water on one's back. At Spotted Bear Lookout, the closest water was at the ranger station several thousand feet below. The lookout would fill a snow tank with snow in the spring and once again before the snow drifts melted. The meltwater was used for washing windows, scrubbing floors, and bathing. The packer brought up drinking water in four 10-gallon cans in the spring and replaced them a couple of times a season (Funk 1981).

Sanitation on a lookout was sometimes not all that could be desired. At Jumbo Lookout in 1956, for example, garbage was dumped over the cliff to the west of the lookout. The Forest Service inspector recommended discontinuing this practice "since some dudes visit the point. Surely we can set a better example than this even though the point is solid rock" (24PW1003, FNF CR).

During World War II the Flathead National Forest, like others around the country, hired women to work on a few lookouts because of the shortage of men during the war. The Flathead had four lookouts occupied by women then: Nine Mile, Mission, Crane Mountain, and Jim Creek. The Forest Service had hired women earlier as lookouts, at least by the 1920s, but there was resistance because much of the heavier work fell on the rangers, such as phone line maintenance, clearing trail, repairing buildings, and fire fighting (Walter Kasberg to Regional Forester, 2 February 1967, 5100 Fire Management - Historical - Women Lookouts, RO; "Last Women" 1926:701-702).

As of the mid-1960s, no one working inside a Flathead National Forest lookout had been injured by lightning, but a phone line worker was struck and killed by lightning in 1937. In 1929, a fire that started just east of Thompson-Seton lookout reportedly burned the lookout building there. The Review Mountain camp, also in the North Fork, burned that same year, and Huckleberry Mountain Lookout in Glacier National Park burned in both 1929 and 1967. In the 1950s, most of

the lookouts built in the 1930s (which had been built to last 15 to 20 years) were in need of replacement or repair (Shaw 1967:96; Yenne 1983:30-32; Kressek 1984:357; Ralph Hand, "History of Region 1 Lookout System," 8/23/54, 5100-Lookouts - Historical, RO).

Beginning in 1945 parts of the Flathead, Lolo, Lewis & Clark, and Helena National Forests greatly reduced the number of manned lookouts in favor of regular air patrols. Between 1945 and 1956 the number of lookouts in Region One were reduced from 800 to 200. From 147 lookouts on the Flathead National Forest in 1939, in 1954 the Flathead National Forest only had 40 positions. In 1966, only 21 lookouts were occupied on the Flathead National Forest during the fire season. These were McCaffery, Mission, Cooney, Jim Creek, Elbow, Desert, Baptiste, Firefighter, Spotted Bear, Bungalow, Red Plume, Mud Lake, Jumbo, Kah Mountain, Pioneer, Nine Mile, Cyclone, Thoma, Johnson, Ashley, and Whitefish. By the early 1990s, fewer than 5 lookouts were regularly occupied (3 October 1956, 1380 Reports - Historical - Reports to the Chief, RO; Ralph Hand, "History of Region 1 Lookout System," 8/23/54, 5100-Lookouts - Historical, RO; Walter Kasberg to Regional Forester, 2 February 1967, 5100 Fire Management - Historical - Women Lookouts, RO).

Aerial photography was initiated in Region One in 1925, and it provided the first reliable maps for many areas of the Flathead National Forest, such as the upper South Fork where the cost of mapping by other methods had been prohibitive. Even in the early 1930s, the maps of many areas were inaccurate (trails were shown on maps as much as one mile from their actual locations, for example). Another mapping project that helped with fire control was fuel-type mapping, which began in 1933. These maps helped determine the number of men to send to a fire in a particular area. The Region-wide project statistically analyzed over 12,000 fires in the 1920s and determined the appropriate level of response for each type of fuel in the region (USDA FS "History of Engineering" 1990:25-26; Taylor 1981; "History of the Use of Aircrafts", n.d., FNF CR:3; Taylor 1986; Caywood et al. 1991:57).

The first air patrols in Region One occurred in 1925 out of Spokane. The planes flew when lookout visibility was low and during lightning storms, and they also did scouting flights on large fires. Until 1927 the Forest Service used military planes and pilots, but after that the agency contracted with commercial air services for fire patrols. The Flathead National Forest began marking its lookout points in 1929 so that they could be more readily located and identified from the air (Gray 1982:24-25).

The first use of air patrol on the Flathead National Forest was in 1929 (a message to "save Spotted Bear Ranger Station at any cost" was dropped from the plane to the fire control staff officer below). In 1930, construction began on seven backcountry landing fields in Montana and northern Idaho. The airfield at Big Prairie was one of the two first airstrips, completed by the 1931 fire season. Four airplane landing fields were being maintained in 1941 to administer the Bob Marshall Wilderness in the interest of fire control; they were not open to the public. In 1946 an aerial patrol plane was stationed at Spotted Bear Ranger Station (Baker et al. 1993:74; Shaw 1967: 134; Caywood et al. 1991:39; Gaffney 1941:429).

The Continental Unit, created in 1945, was the first experimental aerial forest fire control area in the world. It was set up on 2 million acres of roadless wilderness, including part of the Flathead

National Forest. The network relied on fire detection from airplanes and fire suppression by smokejumpers primarily instead of ground crews. The Continental Unit radio network included Monture Ranger Station, North Fork Cabin, Fall Pint Lookout, Basin Creek Station, Sentinel Lookout, Big Prairie Ranger Station, Kidd Mountain, Salmon Forks, Brushey Park, Bungalow Lookout, Pentagon Cabin, Schafer Ranger Station, Grizzly Park, West Fork Cabin, Gates Park, Pretty Prairie, Prairie Point, Prairie Reef, Benchmark Station, and Lincoln Ranger Station. The network operated for three experimental seasons, and then the responsibility for fire control was returned to each of the Forests. Based on the experiment, several national forests then put in a system of combined air-ground detection and suppression, and other agencies, states, and Canada later modified the system to meet their needs (24FH431, FNF CR; Clepper 1971:183).

By 1951, over 80% of the fires on the national forests were reported within 30 minutes after discovery. The Flathead National Forest had a greater average distance of fires from roads than the average for the Region. Between 1931 and 1945 the average fire on the Flathead was just over 4 miles from a road. Almost 16% of the lightning fires on the Forest were over 8 hours' travel time from a road (Barrows 1951:174, 187, 195-196).

In 1940, one key smokechaser was selected from each of seven Forests in Region One to participate in the Forest Service's experimental smokejumper program (Dick Lynch was the Flathead representative). In 1941 the smokejumpers were based at Nine Mile near Missoula, Big Prairie on the Flathead, and Moose Creek on the Nez Perce. In that year there were three squads totalling 26 men. In 1942 there were four squads, one of which was stationed again at Big Prairie. From 1943 until the end of the war the smokejumper program was kept going by volunteers from the Civilian Public Service program (conscientious objectors), and a crew of these men was stationed at Big Prairie during the war. Johnson Flying Service of Missoula was contracted to fly jumpers in Region One. The company purchased its first Ford Tri-Motor plane in 1935, which by then had become obsolete for commercial use. The last Tri-Motor had been built in 1933, but they were used over 30 years by Johnson and were a familiar sight in the skies over the Flathead National Forest during fire season. The first smokejumpers (13 in number) to jump on a Flathead National Forest fire were dropped into the Dean Creek drainage in 1941 (Cohen 1983:13, 26-27, 30, 38, 42, 64, 68-69; Baker et al. 1993:163; "History of Smokejumping," 1959, FNF CR: 1-8; Shaw 1967:134).

By 1944 smokejumping was standard practice, no longer experimental in Region One. In 1945 there were about 235 smokejumpers in the program, and some national forests had reduced their ground forces to depend more on smokejumpers. The fire season of 1945 demonstrated that smokejumpers combined with air detection could save money ("History of Smokejumping," 1959, FNF CR:9).

Smokejumpers experienced tragedy in fires, as did ground crews. In 1949 the Mann Gulch Fire on the Helena National Forest killed 12 smokejumpers and a district guard. Two of the smokejumpers who died in the fire were from Kalispell; one was the son of long-time Flathead National Forest employee Henry Thol.

Fire Suppression

As discussed above, early efforts at fire control on the forest reserves were severely limited by lack of money, transportation, and communication systems. One of the earliest descriptions of fire suppression on the Lewis & Clarke Forest Reserve was written by forest supervisor Gust Moser. Moser and about five men built 26 miles of fire line, a tremendous accomplishment. Moser reported, "with the limited force I have had, better results have never been attained in fighting forest fires....Am satisfied that our work has saved enough timber to pay the full expense of running the Lewis & Clarke Forest Reserve for the next 10 years. We were entirely out of provisions for three days, all we had was bread and venison, I had a lot of provisions 25 miles up the river but did not have a man to spare to send after it" (16 August 1900, entry 44, box 4, RG 95, FRC).

The "genius" of early fire protection lay in the organizational skills of the Forest Service, including the standardizing and coordinating of tools. The Forest Service developed special tools for fire control beginning about 1910. Innovations included the Osborne firefinder (ca. 1910), the brush hook, the smokechaser pack frame or "Clack board" (developed by Jack Clack, who had worked on the Flathead National Forest), the Koch tool (a combination shovel and hoe developed by Elers Koch of the Regional Office in Missoula), the portable water pump, special rakes, and the Pulaski (a combination ax and mattock developed by Ed Pulaski after the 1910 fires) (see Figure 74). The development of a sleeping bag with shoulder straps, filled with kapok fibers, was a significant innovation. The 9-pound bag replaced the 23-pound bag used previously, allowing three pack horses to be eliminated from a pack string moving a 25-man outfit. Bill Nagel, supervisor of the Blackfeet National Forest, owned the first sleeping bag used in the area in the early 1930s. Within a few years "kapoks" were in fire caches and then in general use on the Blackfeet and Flathead National Forests (Pyne 1982:425-526, 429-430, 432; Bradeen 1931:5; Taylor 1981).



Figure 74. Portable water pump in use on Wolf Creek fire, 1924 (courtesy of Flathead National Forest, Kalispell).

Pat Taylor described the on-the-ground men working for the Forest Service in the 1930s as dedicated and hard-working. "I saw men work on fires in those times until they would be so exhausted they would just fall over and lay there in the fire trench trying to get their breath...They got 35 cents an hour and their board, if they could find anything to eat around the fire camp" (see Figure 75) (Taylor 1981).



Figure 75. Putting final touches on fire line, Tango Creek fire, 1953 (photo by W. E. Steuerwald, courtesy of USDA Forest Service, Region One, Missoula).

Other Forest Service workers had different experiences. As John F. Preston commented after his experience with large fire crews on the Big River (Middle Fork) fires in 1914:

Some cripples are sent who it is perfectly apparent cannot be of much service. A one armed man, and an old fellow who was so stiff he could hardly walk, were sent to the Vinegar fire (John F. Preston, Report on Big River Fires, 1914, 1914 Fires Flathead, RO:2/7).

Other supervisors complained that some fire crews felt that if they got a fire under control they would lose their job. Foremen often preferred to hire local men who were personally interested in stopping the fire because it was burning near their own homes or because they had other work to get to (27 September 1919, 5100-Fire Management - 1919 Fire Season - General, RO).

In the 1929 season, approximately 241,000 acres burned (67 of the fires were on the Flathead National Forest, including the Half Moon fire that burned over 100,000 acres). Some of the large

fires in 1929 burned in the Java area and on the South Fork near Spotted Bear Ranger Station (Baker et al. 1993:150; *Whitefish Independent*, 16 August 1929).

The Half Moon fire of 1929 that burned east from Columbia Falls to Lake McDonald tested the Flathead and Blackfoot National Forests' ability to fight large, fast-moving fires. The fire burned 103,400 acres (29,400 on Forest Service land) (see Figure 76). Slash, brush, and downed timber from a 1924 windstorm fueled the flames, and the fire destroyed buildings, ranches, privately owned timber, and logs and ties piled in decks. Thirty men at a logging camp north of Columbia Falls were trapped by fire but later rescued. One man escaped death near today's Blankenship Road by lying in an irrigation ditch ("Appraisal" 1930; *Whitefish Independent*, 23 August 1929).

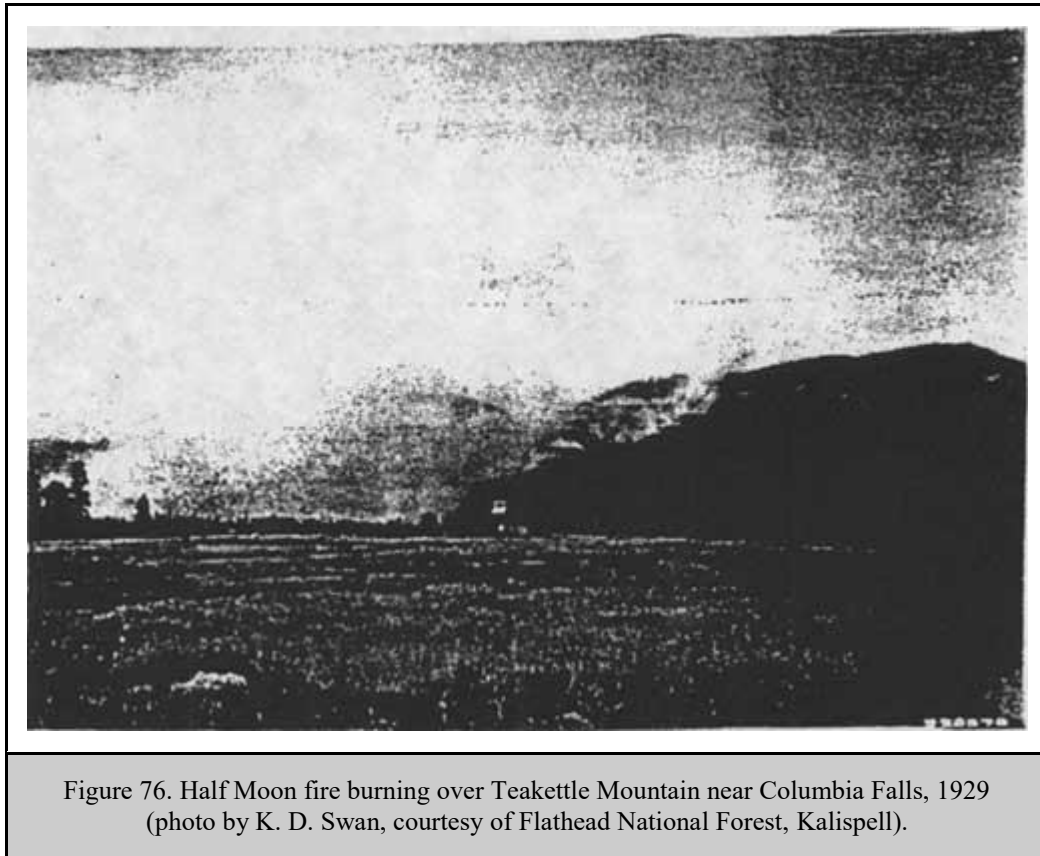


Figure 76. Half Moon fire burning over Teakettle Mountain near Columbia Falls, 1929 (photo by K. D. Swan, courtesy of Flathead National Forest, Kalispell).

The fire traveled more than 30 miles in runs on two successive days, and it crossed three mountain ranges and the Flathead River. It took about 1,000 men a week plus nearly 100 miles of fire line to bring the fire under control (see Figure 77). A total of 5,208 man days were spent on the fire. Help was provided the two national forests by the Northern Montana Forestry Association, the State Lumber Company, and the J. Neils Lumber Company. Forest officers were flown in from as far away as Arizona and New Mexico to work on the management team (box 16, folder 1, "Number of Men Employed," NMFA Papers, UM; USDA FS "Early Days" 1955:38).

Area burned:

Glacier National Park	50,000 acres
Blackfeet National Forest	1,700
Flathead National Forest	27,700
non-federal land	<u>24,000</u>
total	103,400

Suppression costs (estimated):

Glacier National Park	\$119,162
other agencies	75,000
total cost	\$194,162

Figure 77. Half Moon fire of 1929, acres burned and fire suppression costs ("Appraisal" 1930).

The Half Moon fire was started by sparks from a logging railroad locomotive. In order to sue the lumber company for damages, it was necessary to cruise the burned area. This was done on snowshoes in the spring of 1930. According to one participant, 25 men from Region One were detailed to help with the cruising. He said, "The Park personnel claimed they knew nothing about cruising and as a result they sat around nice warm fires while Forest Service employees tackled the job." In 1932 the government apparently filed a suit against the State Lumber Company for property damage and the cost of suppression, but the result of the case is not known (USDA FS "Early Days" 1976:206; "Half Moon" 1932:12).

The Half Moon Fire burned on J. Neils land north of Columbia Falls. At that time Neils was logging in the Coram area. The company had 345,000 cedar poles at the logging site and no fire insurance. Although the logging camp and a Shay Locomotive burned, the cedar yard was saved. The company then salvaged the valuable burned white pine and spruce. They had two railroad logging camps operating within three weeks, with tractors and about 200 men from Libby, and they shipped up to 40 cars of logs a day. By next spring much of the spruce was not merchantable, but the white pine was good through 1930. The Douglas-fir and western larch were not salvaged because there were not enough tie mills available to harvest the timber both in the Columbia Falls area and along the Flathead River (P. Neils 1971:59-60).

During World War II the Forest Service experienced a drain of experienced personnel to military service and the war industries, and the CCC program ended. Various programs, such as the Forest Fire Fighters Service and the Civilian Air Patrol, helped provide personnel, and a special fund was established to employ and train standby firefighting crews towards the end of the war. Students (16- and 17-year-olds) were recruited for firefighting and to work on slash disposal. Shortly after World War II, Region One, in cooperation with Fire Control, designed and put together the disposable mess gear that was soon generally used and accepted by all western regions and stocked at the Spokane warehouse (W. Robbins 1982:162-163; Baker et al. 1993:160; 3 October 1956, 1380 Reports - Historical - Reports to the Chief, RO).

Airplanes allowed for a variety of new fire-suppression techniques. The first fire camp was dropped in on Bunker Creek in 1939. In 1947 water bombs were dropped on a fire on the Deerlodge, and the use of chemical fire retardants followed in 1958 on the Flathead. Helicopters were first used in the Flathead National Forest in 1957, for fire control and administrative use (Shaw 1967:9, 134).

By 1935 fire control officers in Region One were prepared to implement the new Forest Service "10 a.m. policy," which was to aim to control every fire that was detected by at least 10 a.m. of the following day. This policy standardized firefighting for the first time, and it was not superseded by a wholly new policy until 1978. Continuing alarm over the phenomenon of mass fire encouraged the support of the tough 10 a.m. policy that guided Forest Service suppression tactics. A 1934 fire on the Selway led to a major debate over the virtue of fighting every fire, but the previous policy of suppressing all fires won out. At that time the Forest Service also began allocating presuppression budgets as determined by fire danger (Pyne 1982:176, 282-83, 290; Hardy 1983:22).

As early as the summer of 1910, men in the California lumber industry were arguing the benefits of light burning (prescribed burns to reduce fuel and thus fire hazard), and the Forest Service did study the issue. After the 1910 fires in Montana and Idaho, however, the Forest Service could not even consider the thought of intentionally setting fires. It was not until Lyle Watts, the last of those who had been through the 1910 fires, succeeded Earl Clapp as Chief Forester in 1943 that the Forest Service approved the concept of light burning (Pyne 1982:251; Steen 1976:135-36).

Cooperative Fire Efforts

Fires started along railroad tracks have always been a major concern in the northern Rockies, and various laws have tried to reduce the chance of such fires getting started. An 1881 Montana act required railroads to keep their right-of-ways clear of all combustible material on each side of the track for the whole width of land owned by the railroad up to a distance of 100'. In 1901 the law required plowing a 6' firebreak on both sides of the track, but it did not apply to mountain districts or routes next to cultivated fields. Beginning in 1907, monetary damages could be collected for any actual loss resulting from a railroad fire. The development of a practical centrifugal spark arrester for railroad locomotives in 1930 was an important technological innovation in fire prevention (Kinney 1917:28; Moon 1991:21-22, 96; Headley 1932:184).

Railroad companies often contributed men to fight fires along their lines. For example, on a 1900 fire started by a railroad locomotive, the Great Northern Railway sent 70 men to fight the fire at no charge to the government (July 1904 fire report, entry 44, box 4, RG 95, FRC).

In 1919 the first state slash law was passed requiring all logging debris to be burned within a year to reduce the fire hazard. In that year the state also regulated railroad exhaust systems, skidders, loaders, locomotives, and portable engines for the first time (Moon 1991:62).

In 1887 the Territory of Montana passed a law making the careless or intentional starting of a forest fire punishable by fine or imprisonment. For example, a Belton man was convicted of leaving a brush-burning fire unattended which spread to Flathead National Forest land. He was

convicted and fined \$100 plus costs. The government also won a suit against the Great Northern Railway in 1917 over fire damage to the Flathead National Forest and Glacier National Park which started on the railroad right-of-way. In 1939 the state legislature required all private owners of land classified as forest land to be assessed for forest fire protection ("Government" 1920:4; Moon 1991:8, 99).

The Montana state board of forestry was established in 1909, and its duties included fire protection on state lands. Federal forest rangers were to serve as state fire wardens on state land. The new state forester began working out cooperative programs with the Forest Service for fire protection. In 1911 the Montana State Forester designated volunteer firewardens for the first time (Moon 1991:44; Little 1968:18-19). The Weeks Law of 1911 greatly helped cooperative fire protection by providing funds for the Forest Service to patrol state land.

In 1908 the first national conference on the conservation of natural resources was held at the White House. One result of the belief in an imminent timber famine was that greater attention was given to fire detection and control, especially by states. Private timber-protection organizations formed first in the northwestern part of the country because of the need to organize men and facilities to act quickly. In most states outside of the northern Rockies, the Forest Service, private landowners, and the states had separate firefighting organizations that normally did not work together. In northern Idaho, protective associations were organized by 1906, and other associations were organized in Montana, Oregon, and Washington (Clepper 1971:29, 45, 48; Winters 1950:33; Baker et al. 1993:301).

One of the positive responses to the 1910 fires was the formation of a cooperative association in Montana to help with fire protection. The Northern Montana Forestry Association (NMFA) was organized in 1911 by a group of forest landowners in order to provide forest fire protection as a group. The main office was located in Kalispell; the chief fire warden for many years was A. E. Boorman. The initial levy was 1/2 cent per acre owned, and the money was used for organizing and equipping fire patrolmen and fire suppression crews. Over the years the organization also began protecting private forest lands from loss by disease and other causes. The organization was very active in the area until approximately 1935. Then its importance declined as firefighting techniques and equipment became more costly, as depression-era timber income dropped, and as the Forest Service got more money and help from the CCC. The NMFA operated until 1969, when the Montana state forestry department took over the fire control duties of the association (Moon 1991:44-45; NMFA Papers, UMA; Baker et al. 1993:303).

By 1920 the NMFA had 910,000 acres under its jurisdiction, and it was the only association of private owners in Montana. At that time, most of the Weeks Law funds were paying for the Forest Service to patrol state land. In 1921 the Blackfoot Forest Protective Association formed. In 1927 a Montana law required every landowner to be responsible for the control of fires burning on his land, so large numbers joined the two associations ("Co-operative Fire Protection in Montana," 3000 State and Private Forestry - General Corr, RO).

By 1929 the NMFA boundaries included approximately 2,250,000 acres of federal, state and private lands, 90% of which were listed with the association. The NMFA also built its own lookouts. For example, they built the original lookout on Haskill Mountain in 1926 and replaced

it in the late 1950s, later giving it to the state. The assessment charged landowners at that time was 2 cents per acre. The various national forests reimbursed the NMFA the cost of suppressing fires within Forest boundaries. The Forest Service helped solicit new members to the association, saying that the agency would like to have all standing timber and young growth on land that would not be in demand for agriculture well protected against fire. In some years the Forest Service and the NMFA did not work together because of disagreements over rates per acre (October 1929 letter, box 5, folder 19, NMFA Papers, UM; 30 March 1926, folder 17, box 9, NMFA Papers, UM; "20th Annual Report of the NMFA, 1930," box 35, folder 3, NMFA Papers, UM:4).

According to one Flathead National Forest employee, the NMFA was quite cooperative with the Forest Service, although there was some grumbling that the association did not act efficiently on fires if no merchantable timber was involved. Much Forest Service land was actually given over to them to protect. If a fire was located near a national forest boundary, the Forest Service would send crews in, but if it was inside the NMFA boundaries the Forest Service would report it and the NMFA would send in its own crews (Helseth 1981;7 February 1924, Flathead 1920-23 Inspection Reports, RG 95, FRC).

The Clarke-McNary Act of 1924 made federal matching funds available to qualified state protection agencies for fire control, reforestation, and other purposes. In 1926 the state of Montana was still paying the Forest Service to protect the Stillwater State Forest from fire. After the Stryker fire and another by Keith Mountain blew up (with state workers claiming that the Forest Service had not fought the fires hard enough), the state decided to get into firefighting itself, and in 1928 the state became solely responsible for fires on its land (Steen 1976:190; Moon 1991:69; Cusick 1986:10).

The state built its first permanent lookout in 1914 on Werner Peak, a log cabin with a glass cupola on top. That year, Montana had 282 fire patrolmen walking and riding the woods, each man covering an average of 63,000 acres. Most of the patrolmen worked for the federal government, but some were employed by the state, the Northern Pacific Railroad, J. Neils Lumber Company, ACM, Bonner's Ferry Lumber Company, and the NMFA (Moon 1991:60-61).

In 1956 the State Board of Forestry approved the formation of the Swan River State Fire Protection District. The state forestry department then began providing fire protection on the state, federal, and private lands within the district, and the buildings at Goat Creek in the Swan Valley were constructed in the next few years (Conrad 1964:32).

Some lumber companies, such as the F. H. Stoltze Land Company and the ACM, cooperated with the Flathead National Forest by donating land for lookout sites. The City of Whitefish also cooperated with the Forest Service by paying the salary of a Forest Service lookout on Whitefish Lookout (FNF Lands; 26 November 1937 memo, Inspection Reports, Region One, 1937-, RG 95, FRC).

The Flathead Indian Reservation had no established fire lookouts until 1931, but their forestry officials communicated by phone with six Forest Service lookouts near them. They also provided

men to fight fires under cooperative agreements with the Forest Service, the state, and private forestry associations (Historical Research Associates 1977:241-242).

The Forest Service assisted on the 1910 fires in Glacier National Park and on other fires in the Park, including the large 1936 Heavens Peak fire. In 1923 the Park agreed to build a lookout on Elk Mountain that would chiefly be of help to the Flathead National Forest, and in return the Forest agreed to build one on Nyack Mountain to help the Park. In 1923, the Park developed lookouts near Bowman Lake and on Huckleberry Mountain in return for detection from Forest Service lookouts. The Forest Service selected, trained, supervised, and inspected these positions. By 1923 the two agencies had a direct phone line to aid in cooperative fire detection and suppression efforts (Shaw 1967:91; 15 December 1923 and 7 February 1924, 1920-23 Inspection Reports, RG 95, FRC; Schene 1990:69-70).

Even in the early (GLO) years, the Forest Service was actively trying to educate the public about preventable fires, if only by posting the national forests with fire warnings and notices to campers. After the 1910 fires, the publicity campaign increased until notices were provided in phone directories, railroad timetables, hotels, and so on (Woolley 1913:763-764).

Smokey Bear was created in 1944 because of concern over the nation's timber supply. The Advertising Council wrote ads and posters to encourage citizens to participate in fire prevention.

The most popular slogan, "Only You Can Prevent Forest Fires," was created in approximately 1947. This and other advertising techniques resulted in a marked decrease in man-caused forest fires (Morrison 1988:3, 7-8, 10).

TIMBER HARVESTING

Introduction

For many years the U. S. lumber industry was migratory. Centered in the Northeast and upper Midwest until the 1890s, the industry next moved to the Southeast and then to the West Coast. The Rocky Mountain states were the last to develop. The shortage of good white pine in the Great Lakes states led the logging industry to relocate to the West. The construction of railroad lines, plus increased mining, agriculture, and fruit-growing in the West all helped create a demand for and a way to market timber (Bolle 1966:14; Hudson et al. ca. 1981:184).

The lumber industry was active in the Flathead Valley on a small scale beginning in the 1880s, increasing greatly when the Great Northern Railway reached the valley. Timber trespasses - the stealing of timber from the public domain - were common in the 1890s in the accessible wooded valleys of the Flathead. Although there was generally a large number of sawmills in the Flathead, a handful of the largest companies tended to dominate the market, notably the Somers Lumber Company (1901-1948). One of the main timber products of Flathead County were railroad crossties, generally cut from Douglas-fir or western larch and either hewn in the woods or milled in portable or permanent sawmills.

Flathead National Forest timber sales were infrequent and small-scale until after World War II (the major exception was the 1913-19 sale of almost 90 million board feet in the Swan Valley to the Somers Lumber Company). Logging on national forests around the country increased dramatically in the 1940s and 1950s, and the Flathead National Forest was no exception.

Until the 1930s, most logging in the Flathead was done by men who lived in the woods in logging camps. Horses, logging railroads, and river drives were used to transport logs in the early years, later supplemented or replaced with tractors and trucks. Similarly, the two-man crosscut saws gave way to chainsaws. There were a number of labor strikes among woodworkers and sawmill workers in the Flathead Valley in the early years. The most notable of these strikes were organized by the I. W. W. (the Wobblies).

Over the decades, the timber industry in northwestern Montana has changed dramatically. The locations of sales have shifted to less accessible areas, the species harvested have changed, harvesting methods have been mechanized, the number and size of mills have varied, and contract logging has replaced company crews.

Although there was generally not much logging on the Flathead National Forest until the 1950s, evidence of earlier sales can be found. Good examples are the logging railroad grade and remains of logging camps in the Swan Valley, which were built by the Somers Lumber Company in the 1910s. High stumps with springboard notches carved in them in the more accessible parts of the Forest evoke the era of the crosscut saw.

1800s to 1905

In the 1860s eastern Montana had more logging activity than western Montana. There were, however, a number of early mills in the Missoula area and in the Bitterroot Valley, mostly associated with gold camps. In the 1870s and early 1880s many small mills failed. They recovered within five years, though, due to large-scale quartz hardrock mining replacing smaller placer operations and the construction of railroads through the area (the Utah Northern came to Butte in 1881 and the NPRR crossed Montana in 1883) (Moon 1991:4-5).

By 1884, mills west of the Divide were supplying the Anaconda Copper Mining Company (ACM) with 300,000 cords of wood a year for smelter fuel alone. In the mid-1880s, the ACM's Anaconda mine was the most productive copper mine in the United States, and the company was influential for decades in state politics and media. In 1888, the ACM was using 4,000 board feet of timber a day in its mines. Once the importance of timber to mining was recognized, mining corporations formed their own sawmilling operations. For example, the ACM bought the Big Blackfoot Milling Company to stabilize its lumber supply (Moon 1991:5; Toole 1968:353; Schutza 1975:54).

Railroad construction and maintenance created a tremendous demand for lumber. In the early 1900s the nation's railroads consumed about 1/5 of the timber harvest. Railroads needed over 2,500 crossties per mile to support their tracks. They also needed timber for bridges, pilings, telegraph poles, snow fences, fuelwood for the camps, cribbing, tunnel timbers, fuel, corduroy roads, and railroad buildings. Many small sawmills sprang up along railroad routes. By the late 1800s, huge permanent and also portable mills were operating 24 hours a day all over northwestern Montana to meet the demand (Olson 1971:4; Moon 1991:5).

In the Flathead Valley, the construction of the Great Northern Railway led to a great deal of logging along the line. In 1891, while the railroad was being built across the Divide, portable saw mills were set up at McCarthysville and at the junction of Summit Creek and the Middle Fork to saw Douglas-fir timbers for bridges. Several million feet of dimension timber were used for bridges and tunnels. The benchlands along the line were cut over, some extensively. The construction crew cleared the line for the tracks, using that timber for ties, and then cut the remaining ties needed from nearby stands of timber. Several hundred thousand hewed ties were used. In the Summit and Bear Creek areas, over 100 buildings were constructed for the grading camps. In building the tote road paralleling the line, the path had to be cleared and 122 bridges and several corduroy roads were made (*Inter Lake* 13 March 1891; Ayres "Flathead" 1900:312, 315-16; Green 1969:I, 16; Ayres "Lewis & Clarke" 1900:47).

The coming of the Great Northern to the Flathead Valley encouraged the conversion of small mills to larger steam plants using circular saws. The first large mills in the area were built when the railroad came through. The Great Northern did not receive a government land grant in Montana, but it did purchase enough timber land in the Flathead to make it one of the largest landowners in the valley. Montana lumbermen had a difficult time competing effectively with eastern lumber until the GNRR arrived and introduced lower freight rates (Bolte 1959:63-64, 68; Burlingame 1957:11, 6).

One of the first sawmills in western Montana was built in 1856 by the Jesuits at St. Ignatius. Foy's Mill was one of the earliest mills in the upper Flathead. The water-powered mill was built

in 1884 and had a capacity of 10,000 board feet a day. Another relatively small early mill was the Jessup mill located on the east side of the valley. Other sawmills were built in the late 1880s and early 1890s. The largest mill in the valley for many years was that built by the John O'Brien Lumber Company, which began operating in 1901. Many small mills near the Great Northern line produced only railroad timbers (Schutza 1975:28-29, 31, 55; McDonald 1936:5).

The early mills generally depended on water for power and for transporting the logs to the mills, but this shifted as steam-powered mills and railroad lines were established.

Whitefish Lake was logged in the late 1880s. The Baker Brothers Company built a mill at the outlet of the lake to saw lumber that was floated down the lake or hauled by sled across the ice. This mill was later sold to the John O'Brien Lumber Company, and the Somers Lumber Company operated the business until 1918 (see Figure 78) (Schafer 1973:2, 13-14).

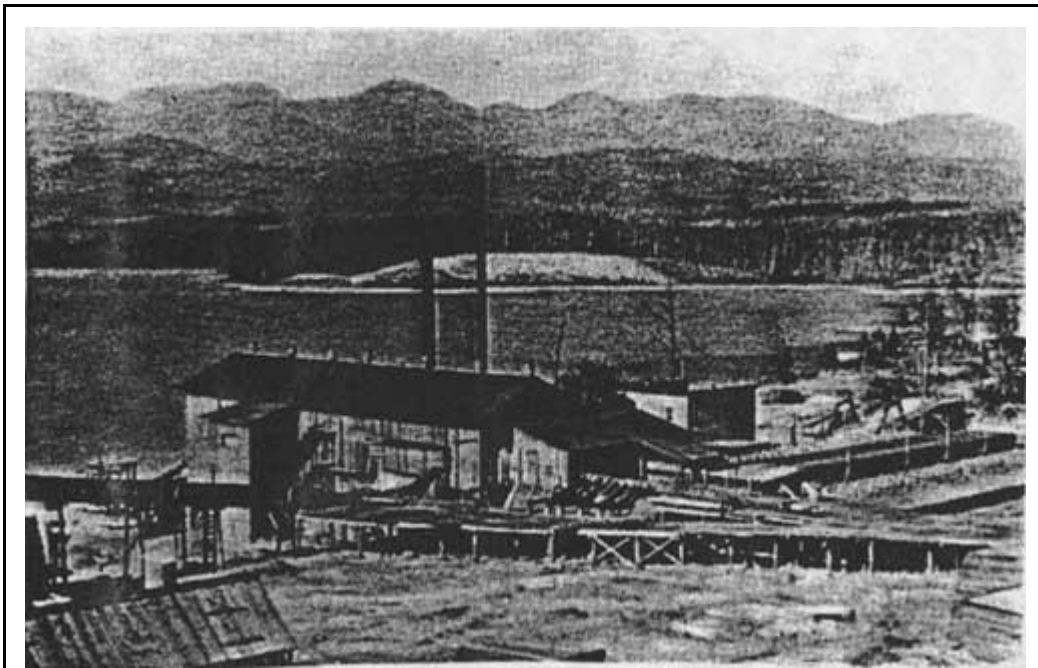


Figure 78. Sawmill on Whitefish Lake (courtesy of Stumptown Historical Society, Whitefish).

The early small mills of the 1880s in the Flathead Valley had very little effect on the "vast forests" of the valley. In the late 1880s, much timber was available free to the small mills as many settlers were glad to have it taken off their land. Some homesteaders even girdled the trees on their land and left them to die standing (Johns 1943:IX, 157; Flathead County Superintendent 1956:22).

Lumber was the first product exported from the Flathead Valley after the railroad was completed in 1891. The ACM's Butte & Montana Company (BM) mill was built at the mouth of the Stillwater and Whitefish Rivers east of Kalispell in the early 1890s; its main purpose was to produce lumber and fuel for the mines and smelters in Silverbow County. It sawed and planed

lumber floated in on the Stillwater, then sold it for shipment on the railroad to the east. Flathead timber was also shipped by railroad to Great Falls to supply fuel for the smelter there. The Flathead operations were competitive with Missoula mills because the GNRR kept its rates the same as the NPRR. The BM also exported lumber to eastern Montana and to North Dakota for sale. In 1904 the GNRR increased its freight rate, and the BM could no longer compete for the Butte market; the ACM sold it at a loss (see Figure 79) (Butcher 1967:73-74; O'Neil 1955:70, 82).



One of the early logging sales on land that later was included in the Flathead Forest Reserve took place the winter of 1890-1891. George Chilson, a former buffalo hunter, ran a logging camp on Logging Creek (on the east side of the North Fork of the Flathead River). As many as 30 men were paid \$50 a month to work on the sale. Under contract with the Columbia Falls Mill Company, they cut several hundred thousand board feet of ponderosa pine, but Chilson ran out of money by February. Some of the logs were decked along Logging Creek but never driven down the river to a mill; others rotted on skids in the woods (Ayres "Flathead" 1900:283; Vaught Papers, 1/UV; Vaught ca. 1943:385-389).

After the financial panic of 1893 and the accompanying low agricultural prices, the economy of the Flathead improved. There was such a great demand for lumber and for labor in logging and sawmilling that residents sent a delegate East to recruit laborers, and several thousand reportedly came as a result. At that time a train load of lumber left the area daily. In 1898, according to a

national survey, Montana had only 24 stationary sawmills, 3 portable sawmills, and 11 shingle mills. At that time there was only one logging railroad in the state (Mauritson 1954:5D; Fernow 1899:119).

In approximately 1899 the prices for lumber were still low. Some of the "best timber" - ponderosa pine - within two miles of Columbia Falls sold for \$1 per thousand board feet on the stump; it sold from the mill for \$7. By 1908, however, rough lumber was worth \$11-12 per thousand board feet (Ayres "Flathead" 1900:258; Elwood 1980: 158).

By 1900 the mines and the railroads dominated Montana's timber industry. Beginning in 1900 a timber boom hit the state. The first big sale of public-land timber was from the Bitterroot National Forest ca. 1910. In general there was a low demand for national forest timber because the more accessible bottomlands were privately owned and because the larch and Douglas-fir on the higher land (such as on national forests) were not considered desirable species. The market at the time was for white pine and ponderosa pine (Bolle 1966:17).

Timber Trespasses

When Montana Territory became a state in 1889, federal grants of land from the public domain were given to the state to sell or use in support of schools, usually sections 16 and 36 of each township. Granville Stuart came to the Flathead in the summer of 1890 to select the lands granted to the state. At that time, the Flathead Valley, which he described as having few natural meadows, was being cleared of its timber and the cutover lands converted to agricultural use (1 August 1891, vol. 2, RS 29, MHS). Much of the land had already been conveyed to settlers, railroads, and so on, so the state had to choose lieu lands instead of sections 16 and 36 where appropriate. Granville Stuart recommended that the state survey timbered sections that had not yet been too heavily settled. In the process, he reported on the state-related timber trespass activities going on in the Flathead Valley at that time.

For example, Stuart reported on a steam mill cutting western larch, ponderosa pine, and Douglas-fir on a school section by men who "well knew it was school land." Stuart estimated they had cut between 2 and 2.5 million board feet of logs on the section. He continued, "It is high time the cupidity and reckless disregard of law of these timber thieves received a check." He mentioned that a man representing the Butte & Montana Commercial Company, which had a sawmill in the area, was requesting a permit to cut 80 square miles of selected state land around Whitefish Lake. Stuart commented, "Verily these sawmill men have their gall with them all the time." He recommended they should be limited to cutting only two sections (1,280 acres) at any one time (24 July 1891, vol. 2, RS 29, MHS).

Stuart also recorded many examples of farmers who were leasing State land and cutting timber on the State sections which they then hauled to sawmills and sold. He commented that the people were mostly poor and were struggling to make ends meet but felt that efforts should be made to stop the trespasses (May 1897, vol. 1, RS 29, MHS). As historian John Ise said, "fraud was a frontier way of life" (quoted in Steen 1976:25).

Much of the land in the Flathead Valley was turned over to private ownership through the Timber and Stone Act of 1878. Sometimes the claimants were fairly obvious about their fraudulent intentions. For example, seven members of the Eckelberry family filed on separate tracts of land north of Ashley Lake in the early 1900s. James Eckelberry stated that he did not have an interest in a sawmill, but that he bought the timber as an investment. He patented 320 acres of land in 1906 and the next month sold the land to C. I. O'Neil, owner of a lumber company in Kalispell. Those acres are now owned by Stoltze Land and Lumber Company. At the same time, Eckelberry was purchasing outright many hundreds of acres in the area and selling them to lumber companies. In that same section, Louretta and Emma Eckelberry each patented 160 acres in 1912, sold the land the same year to the Conrad National Bank, and the land later passed to the American Timber Company. This half-section is now once again national forest land (FNF Class; Flathead County plat records).

In 1908 three Flathead Valley lumber companies (J. Neils Lumber, Somers Lumber Company, and the Northwestern Lumber Company) were brought before a hearing for using "dummies" in securing title to timber claims. Somers and Northwestern were asked to return to the state certain lands for which they had negotiated (Schutza 1975:67; Morrow n.d.:37).

The government generally won timber depredation cases in the lower courts and lost on appeal; it was more successful in prosecuting small individual trespassers who could not afford to hire well-paid lawyers to appeal the cases to higher courts. According to historian K. Ross Toole, "timber depredation in Montana is more typical than extraordinary." In total, nearly 64,000 acres of Montana forest land passed into private ownership through the Timber and Stone Act (Toole 1968:360; Butcher 1967:110; Schutza 1975:67-68).

One of the major timber trespass cases in the Flathead Valley involved the ACM-owned Butte & Montana Commercial Company. In December of 1890 the BM started building a dam at the outlet of Whitefish Lake to have enough water to drive logs to a sawmill in the area of what later became Kalispell. The dam raised the level of the lake by 8'. The company purchased forested land in the Whitefish Lake area, and in the fall of 1891 it contracted with Taylor & Fogg for logs. The loggers cut only the good timber and skidded it to the lake, and the larch lumber was sold in Great Falls. The next year the federal government brought action against the company for timber trespass. In the spring of 1894 a special agent came to the area, and settlers estimated the company had cut a little over 6 million board feet from the public domain rather than land they owned. The case was dropped, however, when the company declared bankruptcy (Schafer 1973:12-13; *Whitefish Pilot* 20 October 1960; O'Neil n.d.; Schutza 1975:67).

Logging on Private Lands, 1905-1942

By 1914 the two largest landholders in Montana were the NPRR and the ACM, and they earned revenue from the land by their logging operations. In approximately 1900 the ACM began to buy large tracts of timberland from the NPRR and from private holders. Eventually it owned more than 1.1 million acres. In 1905 the ACM bought the Montana Improvement Company (including its land and resources) and converted it into the lumber division of the ACM. Over the next ten years the ACM cut nearly half of the timber cut in Montana (Morrow n.d.:32-33; Baker et al. 1993:43).

In 1917 the Somers Lumber Company owned 60,000 acres and the Northern Pacific Railroad owned 140,000 acres in Flathead and Lincoln Counties. In fact, only four owners controlled 51% of the private holdings ("General Summary of Timber Situation," 2400 - Timber - Historical - General Corr, RO:4-5, 13).

The ACM had permits to cut free timber for its mines in Butte for many years, but the company also used these permits to cut timber for retail sale of lumber throughout the state. The ACM was operating in Columbia Falls under the name of Daly & Co. by 1897. In 1898 it was the ACM, Lumber Dept., of Columbia Falls, and soon the business went under the name of the Big Blackfoot Milling Company, the timber subsidiary of the ACM. The ACM bought enormous tracts in northwestern Montana in the 1890s as a timber source for the Butte mines; in 1910 the Big Blackfoot Milling Company owned over 176,000 acres of land in Flathead County. The ACM purchase of timber at Seeley Lake in 1905 was the first stumpage sale that the Forest Service made to that company (Kerlee 1962:37; box 5, folder 5, MC 169, MHS; box 51, folder 18, MC 169, MHS; Bolle 1966:15; Coon 1926:105; *Sanders County Ledger*, 25 March 1910:2).

In approximately 1909 there were 30 sawmills tributary to Kalispell, with an annual cut of 150 million board feet of lumber (see Figure 80). At that time the lumber mills were shipping about 3,500 railroad cars of lumber per year (see Figure 81). Most of the companies, like ACM, owned large tracts of timbered land along rivers that could be used for driving logs to the mills (Great Northern Railway, ca. 1909:21).



Figure 80. Interior of State Lumber Company sawmill, LaSalle, 1898 (courtesy of the Mansfield Library, University of Montana, Missoula).

Mill Name	Mill Location	Daily Capacity (BF)	Number of Men Employed
Northwestern Lumber Co.	Kalispell	70,000	100
Boorman Lumber Co.		35,000	40
Enterprise Lumber Co.		35,000	40
Kalispell Lumber Co.	Athens	45,000	30
Kalispell Lumber Co. planing mill	Kalispell	- - -	55
T. B. Farrow (2 mills)	Marion	35,000	50
W. F. Kelsey	Marion	20,000	25
McMannamy		30,000	25
John O'Brien Lumber Co.	Somers	240,000	300
GNRR tie preserving plant	Somers	- - -	75
Jessup Doe Milling Co. (3 mills)	Montford	70,000	105
John O'Brien Lumber Co.	Whitefish	75,000	50
Hutchison Lumber Mill	Whitefish	35,000	30
lath mill	east of Whitefish	30,000 lath	
Gussenhoven	Fortine	25,000	35
Eureka Lumber Co.	Eureka	40,000	60
State Lumber Co.	Columbia Falls	500,000	65
Hunt Triplet Lumber Co.	Columbia Falls	30,000	40
John Olson Lumber Co.	Columbia Falls	35,000	30
Parker Zorzie Lumber Co.	Columbia Falls	180,000	30
A. O. Westberg	Columbia Falls	25,000	20

Figure 81. list of some of the sawmills in Flathead County in 1907, with daily capacity and number of employees ("Montana Beautiful" 1907:65, 69, 71).

Much of the timbered land around the Stillwater River was logged in the early years because the river was drivable. A large block of private timber land that was harvested along the Stillwater River was later acquired by the Forest Service. The Northwestern Lumber Company mill outside of Kalispell sawed timber from the Stillwater until its mill burned in 1911. In 1916 the Somers Lumber Company bought all of its holdings (millsite, flowage, and almost 15,000 acres of timber on the upper Stillwater River). Another large mill during this period was the State Lumber Company, located on the Whitefish River northwest of the airport (in 1923 the mill was moved to Half Moon) (Taylor 1986; Elwood 1980:156, 158).

The Somers Lumber Company often had several large sales going at one time. For example, in 1912 the company contracted with Henry Good to harvest 35 million board feet of logs over the next two years on the Stillwater River, mostly on land owned by Good. This job employed about 300 men and 50 teams in a line of camps ("Somers Lumber Company" 1912.1).

The Empire Lumber Company bought up timber claims and homesteads in the Truman Creek drainage near Kila. One of the logging camps had a narrow-gauge railroad, the tracks following Wild Bill and Emmons Creeks. The company used V-shaped log chutes and a flume. When the mill closed, the equipment was moved to the mill at Half Moon (Elwood 1980:162).

Montana lumber mills have survived many cycles of economic depression and revival. From 1913 until 1915 Montana mills generally operated at less than half their capacity. In 1914, less than 50% of the lumber manufactured in Montana was used or marketed within the state. The main market outside Montana was in the prairie states west of the Mississippi River (Schutza 1975:55; Moon 1991:54).

In 1921, due to an agricultural depression, higher freight rates, and a glutted market, 38% of all the mills in Montana closed, but the post-war building boom led to the return of small mills. The peak of logging in northwestern Montana before World War II came in 1925, declining until 1927 and then rising again until 1929. Beginning in 1932 production in northwestern Montana began to rise, although nationally the timber industry remained low until World War II (Burlingame 1957:11, 8-9; Sundborg 1945: 14; Steen 1976:197).

Some timber harvested in Canada was milled in the United States. In approximately 1925 a semi-portable sawmill was set up in the Akamina Pass area just north of the international boundary, and some wood products were shipped east of Waterton Lake. The mill supplied timbers to the oil companies in the area for derrick construction in the early 1930s. There was also some logging in the North Fork north of the boundary with access to mills in the United States to the south. Poor transportation facilities and low market demands for small timber restricted logging activity north of the border until the 1960s, when timber was harvested extensively in response to the spruce bark beetle epidemic. The policy of sustained-yield management did not come into use on Crown-owned lands in British Columbia until the 1950s (Ringstad 1976:6; Fregren 1960:12).

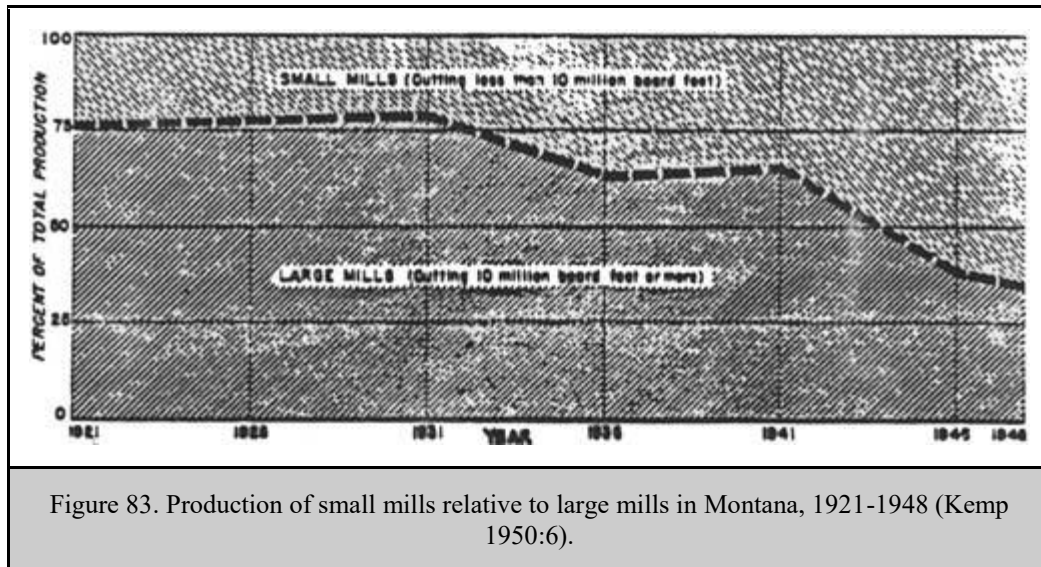
The market for various species of trees changed over the years; this greatly affected which areas in the Flathead Valley were logged during which decades. Western white pine was for many years the most desirable species in the northern Rockies, but it was not well represented on the Flathead (see Figure 82). In 1926, ponderosa pine represented about 33% of the total cut in Montana. Western larch and Douglas-fir represented about 50% combined, and lodgepole pine over 10%. At that time, 64% was cut from private lands, 19% from state forests, and only 17% from national forests. Sixty per cent of Montana's timber was on national forest land, but it was less accessible than the private land, and only 11% of the timber was ponderosa pine. As one observer commented in the 1920s, "the cream is being skimmed at this time." He recommended developing markets for the less desirable species such as larch and lodgepole. Ponderosa pine was the mainstay of the large mill operators in the Flathead Valley, while railroad ties were the

mainstay of the small mill operators. As the supply of ponderosa pine declined, the mills had to rely on a mixed species product (Cunningham 1926:21, 54, 58; Ibenthal 1952:52a).

Scientific Name	Common Name	Composition (%)	Elevation Range
<i>Pinus monticola</i>	White pine	3.5-11.0	3000-5000
<i>Pinus ponderosa</i>	Ponderosa pine	2.0	3000-4000
<i>Pinus contorta</i> var. <i>latifolia</i>	Lodgepole pine	1.0-14.0	3000-6500
<i>Pinus albicaulis</i>	Whitebark pine	0.5-1.0	4000-7000
<i>Larix occidentalis</i>	Western larch	35.0-50.0	3000-5000
<i>Larix lyallii</i>	Subalpine	—	5000
<i>Picea engelmannii</i>	Engelmann spruce	20.0-23.0	3000-6000
<i>Tsuga heterophylla</i>	Western hemlock	1.0	3100-
<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	Douglas-fir	11.0-17.0	3000-6000
<i>Abies grandis</i>	Grand fir	1.0	3000
<i>Abies lasiocarpa</i>	Subalpine fir	1.0	3000-7000
<i>Thuja plicata</i>	Western red cedar	17.0	3000-5500
<i>Juniperus scopulorum</i>	Rocky Mountain juniper	—	3000
<i>Juniperus communis</i>	Common juniper	—	3000-6500
<i>Taxus brevifolia</i>	Pacific yew	—	3000-6000

Figure 82. Timber types in the Flathead River drainage, 1922. White spruce (*Picea glauca*) was not listed in the 1922 chart (Kirkwood 1922:85).

During the Depression the demand for timber plummeted, and many mills shut down. Demand rose slowly in the late 1930s. The Somers Lumber Company continued to decline, marking a shift away from a virtual monopoly towards the leadership of several independent mills. Small mills continued to produce rough lumber for local use, and medium mills expanded somewhat because of the availability of public land. Montana sawmill production did not reach pre-Depression levels, however, until 1942 (see Figure 83) (Bolle 1966:18; Morrow n.d.:64).



Planed and kiln-dried finished lumber began to replace rough lumber as a Flathead export product in the 1930s. The demand for Douglas-fir and western larch products was rising. According to a 1934 report, the main forest products in western Montana were saw logs for lumber, railroad cross ties (western larch, Douglas-fir and ponderosa pine), poles (cedar), piling (Douglas-fir and western larch), mine timbers (western larch, Douglas-fir, and ponderosa pine), cordwood, local farm timbers, and pulpwood (white fir, Engelmann spruce, and western hemlock). Unemployed men often cut cordwood, bringing it in to sell at a designated area on Kalispell's west side known as Wood or Market Street (Bolle 1959:70-71; Brown 1934:217; Swan River Homemakers Club 1993:69; H. Elwood 1994).

Some mill owners found their own markets for "undesirable" tree species. For example, B. J. Boorman built a sawmill in 1899 west of Kalispell in a stand of western larch. He found a new and profitable market for this "unmarketable" timber in New York City, where it was used for finishing lumber. John O'Brien of the O'Brien Lumber Company promoted the use of larch for molding and siding. He used it in the interior of his own home and boasted that "Flathead larch is the best larch in the west" (Johns 1943:IX, 13; 1905 article in Flathead County Supt 1956:96).

Sawed mine timbers were used in the early years, but by the early 1950s round timbers were more in use because they were cheaper. In approximately 1916 the copper market of World War I created such a high demand for mine timbers that local suppliers could not provide enough, so some of the companies entered the larch/Douglas-fir forests for timber. ACM, for example, harvested most of its round timbers in western Montana (Hutchison 1952:31-32).

The needs of the building industry also affected area logging. Kalispell logging contractor George Slack returned from World War I to a building boom, and because the least available item was wood lath, he immediately began manufacturing lath (used in buildings for plaster-and-lath walls and for snow fences). Until then lath had been cut from slabs and waste material at the large mills. Slack set up two dedicated lath mills, one at Coram and one where Martin City now is (that mill later moved to Lake Five) (Green 1971:III, 128-129).

One of the companies that continued to produce lumber during the Depression was the J. Neils Lumber Company. Julius Neils founded the J. Neils Lumber Company in 1899 in Cass Lake, Minnesota. In 1906 the company began purchasing timber lands in Flathead County, buying even-numbered sections among the odd-numbered NPRR land-grant sections that were held largely by the ACM. They hoped to consolidate their holdings later by land exchanges with the ACM. Because of a rumor that a railroad line was going to be built up the east side of Flathead Lake, J. Neils purchased a mill site on Flathead Lake, but it was never used for that purpose. In 1914 the company bought the Dawson Lumber Company in Libby, moved there, and began to consolidate their timber holdings (P. Neils 1971:17, 25; Burlingame 1957:11, 9; Moon 1991:21).

By 1915 J. Neils' holdings in the Flathead included 12,640 acres in the Columbia Falls area and 22,496 acres east of Flathead Lake. According to George Neils, the company owned about 150,000 acres in the Flathead area, mostly on the North Fork, the main fork of the Flathead, and east of Kalispell. The company sawed its last lumber at Minnesota in 1923; this led its managers to try to manage the timberlands in their western operations so as to have permanent operations and stable communities (P. Neils 1971:28, 40; G. Neils 1976:10).

In the 1930s J. Neils got the contracts to log the white pine around Echo Lake (most local mills were not familiar with logging or marketing white pine). In 1935 a Forest Service inspector reported that the company was delivering 5 million board feet of white pine in 32' logs on trucks to the railroad. He commented that "the company is making an honest effort to get the most out of the timber," and that the white pine on the Flathead should all be salvaged immediately because the Forest was not included in the proposed blister rust control plans (G. Neils 1976: 14; Elers Koch, 26 August 1935, Flathead Inspection Reports Region One, RG 95, FRC).

The northwestern Montana Christmas tree industry was a product of the Depression and a welcome source of cash (see Figure 84). The trees in the area held their needles better than those in other parts of the country. During the Depression, 12% of the Christmas trees used in the United States came from Flathead or Lincoln County. In the early 1930s the first sale of Christmas trees on Forest Service land in the area took place on the Blackfeet National Forest. By 1954 Flathead County was producing about a million trees, mainly Douglas-fir. Some was grown on national forests; harvesting the trees was felt to improve the composition of the forest. In 1955, however, the amount of Christmas trees harvested on national forest land in the Flathead was negligible (just over 3% from federal land in 1955) (Cusick 1986:61; 31 March 1933, Flathead Inspection Reports Region One, RG 95, FRC; Montana Conservation Council 1954:51-52; "Area Lumber Output" 1956:4).

Year	Number of Trees
1936	1,242,500
1937	1,534,500
1938	1,676,000
1939	1,967,350
1940	2,338,350
1941	3,082,650
1942	2,203,750

1943	3,102,480
1944	2,755,750
1945	2,723,500
1946	3,299,400
1947	2,515,640
1948	3,098,886
1949	3,256,956

Figure 84. Annual production of Christmas trees in Montana, 1936-1949
(Kemp 1950:32).

The shifting centers of the lumber industry from the Lake states to the South to the Pacific Coast led to concern about a timber famine, the fear that there was no new area (except Alaska) to which the industry could move. Professional foresters and citizens alike called for regulation of logging practices and the application of sound management practices on public and private lands (Cox 1985:191, 193-194).

During the 1910s and 1920s the country moved away from the government regulations common to the previous years and focused instead on developing a cooperative approach between public and private sectors. With the Depression, government regulations returned and federal programs increased in importance. The Weeks Law of 1911 marked the beginning of extensive cooperation among federal, state, and private industry to protect the timber in the country's forests (Cox 1985:193-194).

The Weeks Law encouraged state participation by providing matching funds if a state set up a system to protect the forested watersheds of navigable streams. Under a general land administration act of 1909, a Montana state forestry board was created to manage the state forests on forestry principles, to encourage private owners to preserve and grow timber, and to conserve forest tracts on watersheds of the streams of the state. The Clarke-McNary Law of 1924 provided for federal-state cooperation in a variety of activities, including production and distribution of forest planting stock, cooperation in farm forestry education, and the federal purchase of lands necessary for the production of timber (Cox 1985:194; Kinney 1917:69; Winters 1950:16).

The Copeland Report, written under the authority of the Forest Service and completed in 1933, provided a blueprint for reorganizing the forestry practices of federal, state, and private owners. It also represented a rededication of the Forest Service to the principles of conservation and public welfare promoted by Gifford Pinchot. The report stressed public ownership of forest land and cooperation with private forest owners in managing private lands. Among other things, the Copeland Report addressed the modern concept of multiple use (Gates 1948:598; Steen 1976:202).

During the 1930s the concept of sustained yield changed to the need to coordinate public and private timber supplies to create a stable market. Article X of the National Recovery Act was mandatory for just one year (1934-35), but it was subsequently maintained voluntarily by

industry and the Forest Service as a guide for good forest management. The Lumber Code was intended to revive the industry by reducing production quotas and requiring higher wages and a shorter work week. Article X prescribed sustained yield, a comprehensive fire prevention program, protection of young growth, and replanting after logging (Baker et al. 1993:123, 144-145).

Railroad Ties

Cutting railroad ties was a big business in the Flathead for decades, with the preferred species being Douglas-fir and western larch. Railroads used an average of 2,640 crossties per mile, with a varying rate of replacement. Between 1894 and 1898, *after* the completion of the Great Northern Railway line, 10,000 railroad ties and 1,000 telegraph poles were reportedly cut along the GNR line in the Flathead area (Olson 1971:12; 1905 claim, 1905 Trespass Book, FNF CR).

Lumberman John O'Brien contracted with the railroad in 1901 to build a sawmill at the head of Flathead Lake with an annual capacity of 40 million board feet of lumber; he agreed to saw and deliver to the tie-treating plant 600,000 ties each sawing season for 20 years (see Figure 85). In return, the railroad built a spur track to the sawmill and agreed to loan the money and to place a certain amount of orders. The original tie plant was built in 1901 and was replaced by a new plant in 1927. The mill took in ties from Flathead logging operations, treated them, and then shipped them out as needed along the GNR line. In 1906 John O'Brien sold his interest in the company to the GNR, which became the sole owner, and in 1907 the name was changed to the Somers Lumber Company after the town (Somers was named for a Great Northern agent who looked out for the railroad company's interests in connection with the lumber company). Somers was a company town. In 1937 the mill employed 250-375 people, and it owned 122 dwellings that it rented to employees, providing the water and electricity. Many of the workers were immigrants from Italy, Germany, and Norway. The company also had retail yards in North Dakota, in Havre and Conrad, Montana, and ran a sawmill on Whitefish Lake from 1906-13 and a retail yard there until 1928 ("Corporate History" n.d.:1-3, 10; Elwood 1976:6-7).

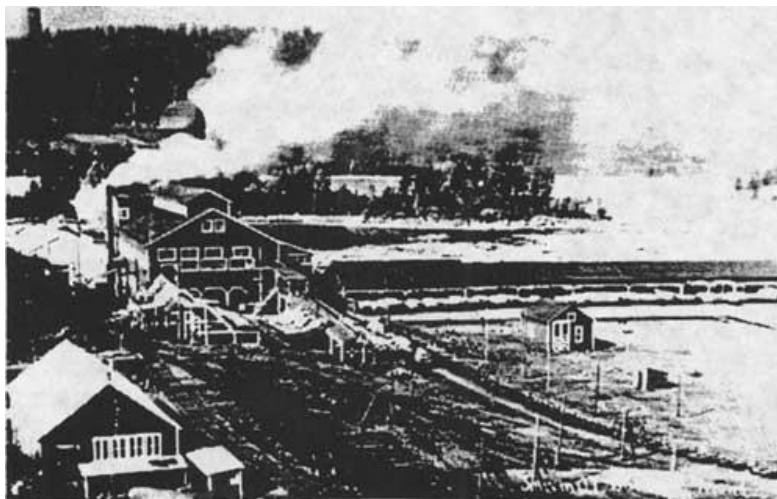


Figure 85. Original Somers sawmill, built 1901 (courtesy of Henry Elwood).

By the winter of 1904-05 the O'Brien mill was manufacturing 60 million board feet of lumber, half of which were made into railroad ties and treated with creosote. The operation included a sawmill, planing mill, box factory, and a sash and door plant, and the mill could manufacture about 5,000 triangular ties a day (1905 article in Flathead County Superintendent 1956:95-96).

The railroad tried to save money and lumber by making the ties last longer. Between 1900 and 1915 the wood preserving industry grew dramatically, and the proportion of ties treated increased from less than 5% to about 30% of all ties. During this period the railroads switched from using zinc chloride to creosote as the preservative. Railroad ties treated after 1910 probably had an average life of 15-20 years. The average use of ties by all railroads began declining about 1908 (Olson 1971:44, 104, 122).

James J. Hill brought the idea of "self-tamping" three-cornered ties to the United States from Germany. Triangular ties had a 12" face and were 8" deep. These ties were sawed in the Somers mill and were used on the Great Northern line until the early 1920s (see Figure 86) (1905 article in Flathead County Superintendent 1956:95-96; Elwood 1976:24; Elwood 1994). The triangular ties were replaced by four-sided, rectangular ties.



Figure 86. Somers Lumber Company workers sitting in front of triangular railroad ties (courtesy of Henry Elwood).

"Tie hacks," the men who worked in the woods hewing cross ties, included many homesteaders who hewed ties for cash income. Often they lived in the woods during the week, returning home only on weekends. After falling the tree, the sawyer would cut the tree into 8' or 8-1/2' sections, depending on the desired length of the tie. An 11" diameter section would make one tie. A 24" diameter section would yield four ties. Teams of sawyers would follow the strip blazed by the cruisers. Some sawyers would work alone in order to earn more money (they were paid per tie). In order to be able to handle the two-man crosscut saw without a partner, the sawyer would use a

makeshift tool called a "rubber man." He would drive a rod into the ground opposite his position by the tree and then would secure a "rubber band" made from an inner tube to the rod and to one end of the saw. The "rubber man" would pull the saw from one side, less efficient than another sawyer but workable. Tie hacks would then stand on the log and hew two sides, then peel the bark off the two sides that had not been hewed. A good tie hack could reportedly hew 20-25 cross ties a day (24FH466, FNF CR; Green 1969:I, 15-16; Swan River Homemakers Club 1993:54; Downes 1994).

Most of the railroad tie cutting in the Flathead was done on private land; the Forest Service often turned down tie sales. In 1907 Edward Dickey applied to cut 40,000 ties from an area near the railroad at Paola. The sale area was on gentle terrain, close to the railroad, and had good timber. The local administrators favored the sale, but the Washington Office rejected it because Dickey would be letting the larger trees stand (the large trees were not harvested for hewed railroad ties). In 1917, however, with the increased demand due to World War I, the tie timber was harvested, and in 1944 the larger trees were sold to a lumber company (Shaw 1967:123).

Railroad ties became a big item of production in Montana sawmills in the mid-1920s (see Figure 87). Most ties cut before then were hewn by tie hacks. In 1925 about 900,000 hewn ties were being cut annually, a little more than 40% of the total tie output. By 1931 hewn ties composed only about 1% of the total; all the rest came from sawmills. The shift to sawed ties brought a concentration of tie production to Flathead, Lake, Lincoln and Sanders counties, which had concentration yards, preservation plants, and good stands of larch and Douglas-fir, the preferred species for railroad ties in the West. Many railroad lines tried Douglas-fir and other species in order to avoid crosshauling railroad timber (Hutchison 1952:30; Olson 1971:124).

Year	No. of sawed railroad ties
1925	1,225,000
1926	1,054,796
1927	959,175
1928	915,895
1929	824,515
1930	613,143
1931	670,000
1932	525,000
1933	---
1934	---
1935	---
1936	---
1937	---
1938	554,540
1939	---
1940	1,237,668

1941	1,398,968
1942	2,319,978
1943	2,239,584
1944	2,090,428
1945	1,302,238
1946	1,008,619
1947	1,336,555

Figure 87. Annual production of sawed cross ties in Montana, 1925-1947
(Kemp 1950:32).

Hewed railroad ties contained more wood; but sawed ties saved freight, had a more uniform absorption rate during pressure treating (making the treatment more effective), and were uniform bearing. They also produced marketable by-products - tie siding - instead of waste chips. The transition to sawing integrated tie production into the large lumber markets. The selection of trees for harvesting also changed. Hewed ties used only 11-15" diameter trees, but sawed ties used all sizes of trees (Olson 1971:112-113).

The next innovation in railroad tie logging was the development of portable tie mills located at the logging sites. After a December 1924 windstorm north of Columbia Falls, a portable mill was set up at the site to salvage the down timber for ties. In 1929 McMillan & Kerr bought a section of timber from Somers Lumber Company and cut the Douglas-fir and western larch into railroad ties with a portable mill (see Figure 88). They delivered the ties and a few sawlogs by truck to the Somers mill at the going price. This contract marked the real beginning of the switch to the use of portable mills in the woods (see Figure 89). By 1932 the success of the method had been proven; that was the last year the Somers sawmill produced cross ties. After that, it produced only a relatively small number of switch ties. When portable mills were used, all side cuts and waste materials (anything less than 6" in diameter) were left in the woods, which saved on transportation costs but wasted a great deal of wood. Woodworkers later worked over and resawed the slab piles ("Corporate History" n.d.:6-7; Mansfield 1986).



Figure 88. McMillan & Kerr tie mill in Patrick gulch near Kalispell, on Flathead National Forest, 1930 (photo by I. V. Anderson) (courtesy of USDA Forest Service, Region One, Missoula).

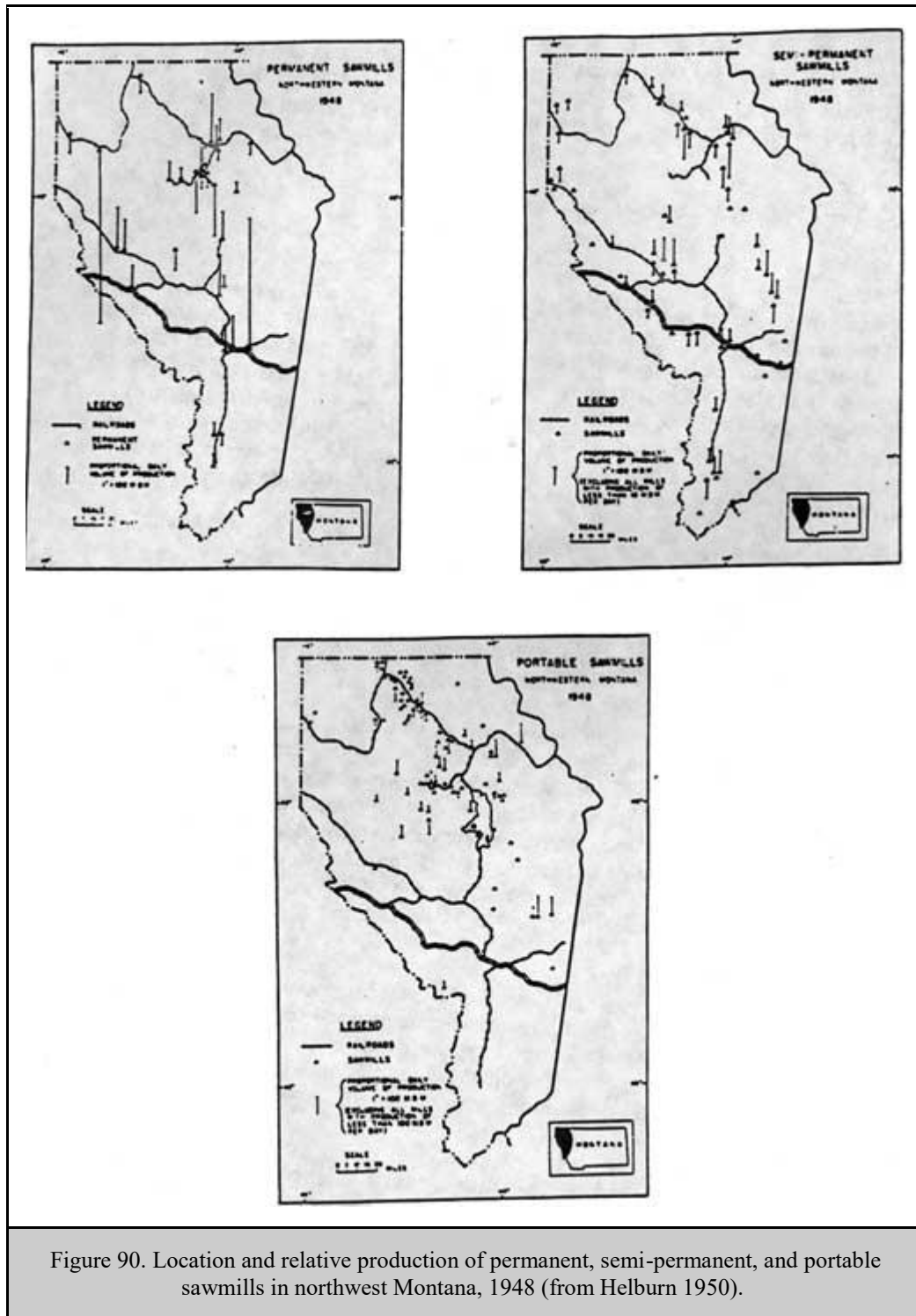


Figure 89. Hauling railroad ties by truck, Eureka, 1929 (courtesy of the Mansfield Library, University of Montana, Missoula).

Flathead logger Clarence Saurey remembered the effect of the stock market crash of October 1929 on the portable tie mills in the Flathead, which were salvaging timber burned in the Half Moon fire of 1929:

Everything was a-running, you know, you could hear them sawmills a-singin' all over the woods. And it shut down overnight...Next morning there wasn't a thing running at all (Saurey 1983).

The change to sawed ties greatly increased the number of small portable circular mills in the Flathead; their number peaked at the height of tie cutting during World War II (see Figure 90). In the Kalispell Working Circle at that time, about 100 circular mills were in operation, plus three band mills. By the late 1950s, however, the market for ties was reduced because of improved preservative treatment and the reconstruction of railroad roadbeds (Ibenthal 1952:48->49).



Ties treated at Somers were shipped as far as Minnesota on the Great Northern line. The record production at the tie plant was in 1944. The previous year, almost 1-1/2 million ties had been sawed at 36 small mills in the county and treated at the Somers plant. By the 1950s many railroads had reorganized their distribution systems to eliminate some of their treating plants. Other technological changes helped increase the life of ties, such as increasing their length from

8' to 8-1/2' or 9' (Elwood 1976:34; Olson 1971:165, 167). The demand for railroad ties, therefore, declined significantly.

The main companies cutting railroad ties in the Flathead were Somers Lumber Company, the Kinshellas, and the Olson Brothers. Some tie contractors had quite a large business in the Flathead. For example, in 1912 George Slack had a contract with the Great Northern to deliver hewn ties, and in the first year he delivered to the right-of-way 700,000 ties. In 1931 the Kinshella brothers and their father signed a 7-year contract to cut railroad ties and sawlogs on Somers Lumber Company land from Lupfer north. The 150 men at the camp received approximately 13 cents per tie (a little more for the larger ones). Workers earned \$2 a day and were charged 90 cents a day board. The ties and logs went to the Somers sawmill and tie-treating plant (24FH466, FNF CR; "Personal Experience Record of Capt. George W. Slack," SC 126, MHS; "Large Logging Project" 1931; Cusick 1986:61).

Many railroad ties were cut in the late 1930s and through World War II in the Pleasant Valley area, which had literally dozens of portable tie mill sites. The Forest Service did not issue permits for mill sites on the national forest, but sometimes sales on private land trespassed onto national forest land (24FH154, FNF CR).

In the late 1940s, western larch and Douglas-fir railroad ties accounted for almost 20% of the total sawmill output of Montana. Small portable mills, with 6-8 men on their crews, were typical. They cut 2,500-12,000 ties a setting and moved rapidly from one tract to another. For each 1000 board feet of ties sawn, they could cut nearly 250 board feet of lumber. When prices for larch and fir boards were low, the tie siding went into the slab pile (Hutchison 1952:31).

Forest Service Logging, 1905-1942

General

Until World War II, timber sales on the Flathead National Forest were generally small scale. Most of the timber was harvested in those years from private lands, not federal lands, near rivers or in accessible areas. The main exceptions were sales designed to harvest scarce species, such as a sale of white pine on the lower North Fork and a cedar sale on Good Creek in the Stillwater area. In 1908, no national forest in Region One had an estimated timber harvest of more than 1% of the total amount of standing timber. Commercial sales of national forest timber did not exceed a billion board feet annually until 1924, but even then it still represented only 1% of the national timber market (Baker et al. 1993:65; Clary 1986:40).

In 1905, Forest Service policy held that the timber on the national forests was supplemental to, not competing with, private holdings, and that the timber should be harvested to meet local needs only. In 1907 early Forest Service timber sales peaked, but these sales represented only 2% of the 44 billion board feet total. Pinchot later claimed that the national forests existed for public welfare purposes, to stabilize local industry and to encourage development (Steen 1976:90-91).

The first administrative manual for the forest reserves was issued in 1902 by the Department of Interior. The section on timber began with regulations on the free use of timber. For sales, local

demand had preference. After a potential purchaser requested a timber sale, the government would inspect it, mark the trees or area to be cut, and then advertise the sale to the public for bids. The Forest Service believed strongly in its mission to promote the wise use of forest resources. In a 1907 handbook, the Forest Service stated clearly, "The timber is there to be used, now and in the future...National Forests are made, first of all, for the lasting benefit of the real home builder. They make it impossible for the land to be skinned" (Steen 1976:59; Pinchot 1907:11, 17).

The first manual provided no appraisal formulas, but timber prices at that time were seldom over \$2 per thousand board feet (the first appraisal manual was issued in 1914). Before 1910 the reproductive capacity of a forest was essentially a matter of guesswork. Then the Forest Service adopted allowable cutting levels in order to protect against over-cutting. The allowable cut represented the amount that would produce sustained-yield harvests (Wiener 1982:2; Clary 1986:30, 34).

In the early years, the Forest Service issued free-use permits for cutting timber. Settlers, miners, residents, and prospectors could harvest \$100 worth of timber annually from forest reserves each year, provided it was used for domestic purposes, firewood, fencing, buildings, or mining. For example, in 1906 on the Lewis & Clark Forest Reserve one man was granted 10 cords of dead standing and down lodgepole near the junction of Upper Twin Creek and the South Fork to build a cabin in the vicinity. In 1905 the forest reserve issued 131 free-use permits that granted about 34,000 board feet and 215 cords of green wood, plus 71,000 board feet and 1,500 cords of dead wood (Wiener 1982:3; "Free Use of Timber, 1905" FNF CR).

Up to 1907 most of the timber harvested on the Flathead National Forest was on land that is now in Glacier National Park, mostly fuelwood and timber for building homes in the Lake McDonald area. The early timber sales on the Forest, few in number, were usually for \$1 per thousand board feet, 3 cents for 30-foot poles, and 15 cents per cord for fuel wood. When the Park was designated in 1910, logging for revenue continued to be allowed within the Park. In 1911, the Park ordered a sawmill and shingle machine, and superintendent Logan stated "the cutting of fully matured timber will not in the least mar the beauty of the park, but will benefit the growing timber...Numerous inquiries for lumber have been received, and in a short time it is believed lumber will rank first among the sources of revenue" (Shaw 1967:1, 12; Logan 1911: 10).

The 1910 fires killed 5-10 billion board feet of mature timber in Idaho and western Montana and led to a glut of timber on the market in Montana. Salvage sales were offered, but only 1 billion board feet were actually sold and cut. The Forest Service even approved the cancellation of current contracts to allow firekilled timber to be used instead (Wiener 1982:33).

By 1923 each national forest had been divided into "working circles" to aid in timber management planning. The boundaries of these divisions were based on topography, transportation networks, management objectives, stand composition and condition, ownership, and the area needed to support local forest-based industries. The boundaries were reviewed and modified as needed. The allowable cuts were determined within that area, consistent with sustained yield over the working circle. Timber management plans were prepared on 10-year cycles (see Figure 91) (Preston 1923:582-585; G. Robinson 1975:62).

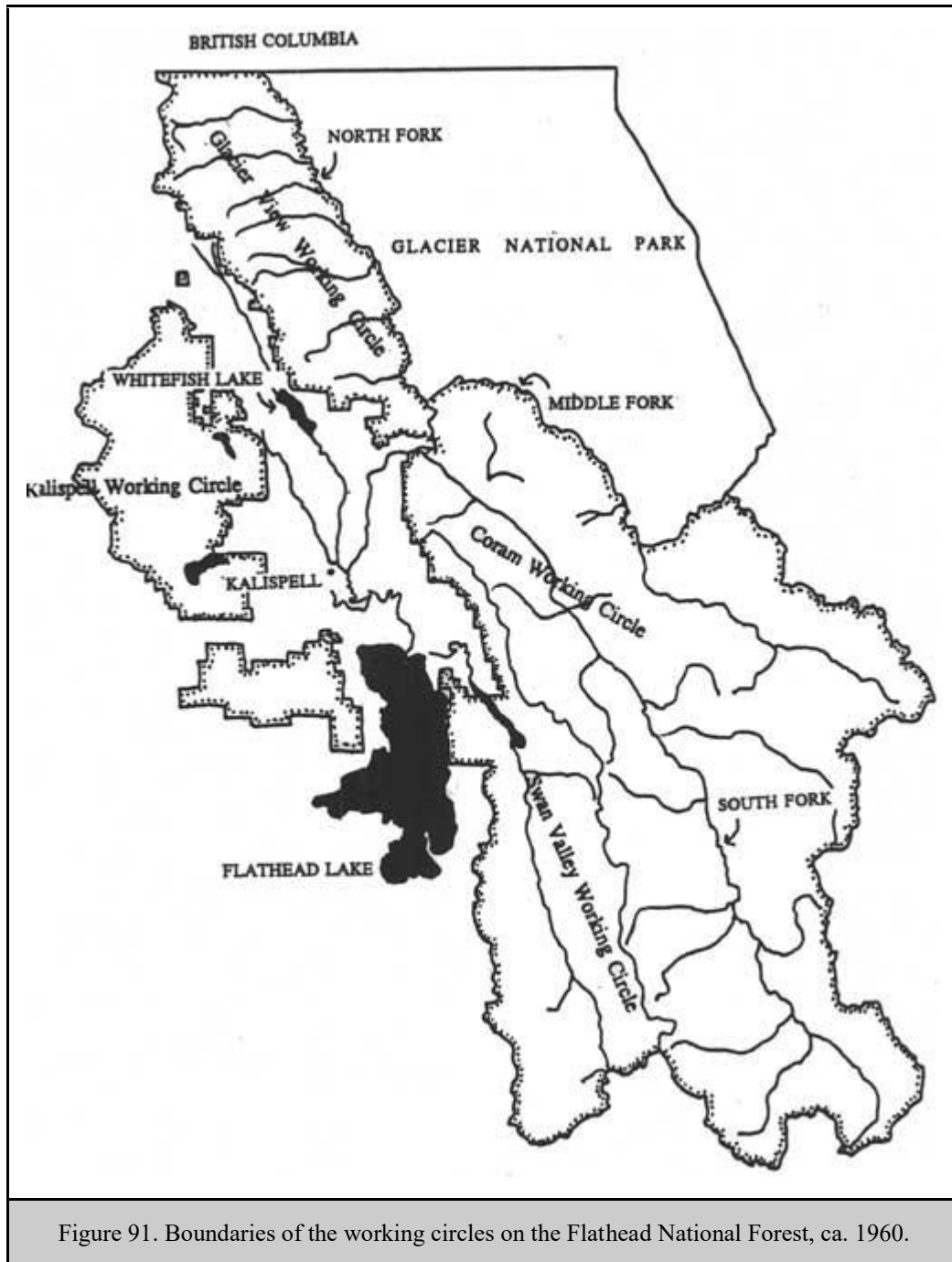


Figure 91. Boundaries of the working circles on the Flathead National Forest, ca. 1960.

The 1920 Flathead National Forest timber management plan called for a sustained yield on each of the working circles to encourage established industries to continue on a permanent basis. It noted that private timber would be "dumped on the market as rapidly as possible" and that federal and state timber provided the only reservoir of timber for future use (see Figure 92) (FNF, "Preliminary Statement of Policy," 20 November 1920, box 85429, item 2, RG 95, FRC).

Species	Blackfeet National Forest	Flathead National Forest
western white pine	74	260
ponderosa pine	102	270
lodgepole pine	151	379
Douglas-fir	483	1120
western larch	1113	1500
Engelmann spruce	1079	769
white and alpine fir	81	321
limber and whitebark pine	4	34
cedar	3	85
hemlock	—	12
total saw & tie timber	3090	4750
cedar poles	12000	35000

Figure 92. 1924 estimates of timber on the Blackfeet and Flathead National Forests. Figures are in million board feet ("Forest Statistics for Region One, approximately 1925," RO).

In the fiscal year ending June 30, 1916, the Flathead and Blackfeet National Forests combined sold 46.5 million board feet of timber, and the sawmills in the same area and same period cut 191.0 million board feet. The percentage of the cut coming from the national forests was fairly significant at that time, and at least one local lumberman complained that the government, by putting the timber on the market, was depressing an already overloaded stumpage market. One of the reasons timber was logged more on private lands in the early years was because of the more stringent regulations on Forest Service sales, such as requirements to leave a 16" stump, dispose of brush, and so on (Charles I. O'Neil to H. H. Chapman, 9 February 1917, 2400 - Timber - Historical - Genl Corr, RO; Hannon 1970).

In 1917 there were complaints in the Kalispell area that the Forest Service was selling its timber at too low a rate (\$1.25 per thousand board feet) to the Eureka Lumber Company, thus reducing the stumpage value of all private timber land holdings in the area. Forest Service competition, it was feared, would prevent private profits. Senator Myers, in response, introduced legislation that would prohibit the sale of any national forest timber for less than \$3 per thousand. This conflict was apparently resolved by a consolidation of private land ownership, as in 1920 a Flathead National Forest report stated that the complaints had largely been silenced by "the absorption of a large part of the small holdings by larger owners who contemplate early exploitation" (Semi-annual report to the Forester, 1 May 1917, 1380 Reports - District 1, 1917; "Public Sentiment," 18 November 1913, in 1380 Reports - Historical - Public Sentiment, RO; FNF, "Preliminary Statement of Policy," 20 November 1920, box 85429, item 2, RG 95, FRC).

According to a contemporary Forest Service report, people were complaining about national forest stumpage prices because they speculated on timber lands and thought the value would go

up, but they had actually paid too much for the land in the first place. If the federal government were to put a high price on the stumpage, then the opportunities of the small operator would be eliminated ("General Summary of Timber Situation," 2400 - Timber - Historical - General Corr, RO:4-5, 13). During the late 1920s, prices for Flathead and Blackfoot National Forest timber sales rarely were higher than \$2 per thousand board feet (see Figure 93).

Buyer	Date	MBF	Timber type	Price/MBF	Total Sale
L. R. Smith		2,000	white pine	2.00	4,000.00
F. Calkins	3/10/26	72	larch & fir	2.17	156.24
J. Oxender	5/18/26	970	larch & fir	1.75	1,697.50
Nyack T&T	1/8/27	1,931	larch & fir	2.14	4,132.34
Nyack T&T	1/8/27	1,677	spruce	2.14	3,588.78
H. Good	4/25/27	200	larch & fir	1.50	300.00
Johnson & Ramlow	12/21/27	250	larch & fir	1.65	412.50
Julius Berg	8/4/27	55	larch & fir	1.50	82.50
Johnson & Ramlow	1/28/28	1,012	larch & fir	1.70	1,720.40
Julius Berg	8/11/28	80	larch & fir	1.50	120.00
Julius Berg	1/16/29	200	larch & fir	1.50	300.00
Julius Berg	1/15/29	20	larch & fir	1.50	30.00
11 tie sales		8,467	larch & fir	1.94	16,540.26

Figure 93. All timber sales on Flathead and Blackfoot National Forests, May 1926-January 1929 ("Appraisal" 1930:11).

World War I had a significant effect on the demand for lumber and on Forest Service resources. At the start of the war in 1914, foreign purchase orders were canceled, but then demand increased greatly because the Allies lacked the manpower to harvest timber in Europe. Under the War Powers Act, the Forest Service was permitted to sell timber without competition, and price ceilings were imposed. During World War I the U. S. Army required a great deal of lumber in Europe. Instead of shipping it overseas, the Army organized a regiment of experienced foresters and lumbermen, many of them Forest Service employees, to be stationed in Europe. In France, the regiment cut about 300 million board feet of lumber plus poles and firewood, operating about 90 sawmills. More than 30,000 American foresters, woodsmen, and mill men served in Europe, many returning home with a new respect for the conservation methods practiced in France and for the frustration with government controls felt by industry in the U. S. The war strengthened industrial trade associations and increased industry-wide cooperation necessary to allow the lumber industry to deal with the government on more equal terms (Cox 1985:205; Wiener 1982:112; Clary 1986:68-69).

Region One of the Forest Service helped out in the 1919 fuel emergency by allowing officials to obtain wood from the national forests for the use of those in need under free-use permits. The

consumer paid only the actual cost of cutting and delivery (16 December 1919, 2400 Timber - Historical - General Corr, RO).

Commercial sales on the national forests remained low during the interwar period. In 1921, for example, the Flathead National Forest sold only 8 million board feet of timber in commercial sales ("Timber Sales Business" 1921:6-7).

In approximately 1929, the Flathead National Forest was still making "no effort...to push the sale of national forest timber. It is considered better management of public resources to preserve and protect this timber until such time as the private timber has been cut and a new source of supply is needed to perpetuate existing industries and meet the demand for forest products." At that time only about 10% of the annual production of 75 million board feet of lumber in the Flathead Valley came from the Flathead National Forest (USDA FS "Flathead National Forest" ca. 1929).

In 1931, during the Depression, President Hoover restricted national forest timber sales because of overproduction. The Forest Service prohibited timber sales over \$500 except to supply mills dependent on the national forests, to supply domestic paper mills, or to salvage damaged timber (W. Robbins 1982:143).

As the prices for paper products rose, the Forest Service fielded inquiries about the possibilities of a pulp industry in Region One. The Forest Service considered the Engelmann spruce stands on the Flathead and Blackfoot National Forests as the most accessible timber of the kind desired by the Wisconsin pulp mills. The Blackfoot National Forest, under the supervision of supervisor Robert McLaughlin, did an extensive study in the late 1910s of the pulpwood resources of northern Montana, hoping to encourage the establishment of a paper industry there ("Robert P. McLaughlin" 1929:4; Silcox to the Forester, 10 May 1917, 2 Semi-annual Report, 1380 Reports - Historical - District 1, RO).

The Forest Service study focussed on Big Creek, Deep Creek, and Canyon Creek in the North Fork. The report indicated that 75% of the timber in that area was good for pulpwood, with a reserve supply to the north and south. It recommended a pulp and paper mill on or near Flathead Lake, with the fluming of logs down tributary streams to the North Fork. The report also stated that the Forest Service would establish new stands after harvest, as it was practicing forestry on the basis of sustained yield. In the 1930s Forest Service officials in the area were still recommending a pulp or paper operation in the Flathead that would be supported by 95 million board feet of spruce and subalpine fir annually. The controlling factor, they believed, would be developing a market for the associated western larch and Douglas-fir ("Possibilities" ca. 1920:3-6, 11-12; Ibenthal 1936:14).

Some flathead timber was shipped out of the area for pulp, although the proposed pulp mill was not built. In 1927 subalpine fir and spruce were being shipped in the log from Nyack to a Spokane pulp mill because the Somers Lumber Company would not accept the logs (Wilfred W. White memos, 11 & 15 August 1927, Flathead Inspection Reports, Region One, RG 95, FRC).

Montana's first pulp mill was built in the Missoula area in 1956 (Bolle 1964:11). Pulp and plywood mills helped stabilize the income of lumber mills. The industry, traditionally cyclic, was

affected by ups and downs in the building industry and by fluctuations in the demand for and price of lumber.

Swan Valley

The public land in the Swan Valley was recognized early as an excellent "logging chance." At the turn of the century, when no commercial timber harvesting had yet been done in the Swan, H. B. Ayres recommended using an electric railway to log the Swan Valley, with a sawmill located at the mouth of the Swan River. In 1906, a Forest Service inspector commented that the Swan and the South Fork both offered excellent opportunities for the construction of roads to make large bodies of timber available for harvest (Ayres "Lewis & Clarke" 1900:79; 28 November 1906, entry 7, box 4, "Reports of the Section of Inspection," RG 95, NA).

The first large (and still the largest ever) timber sale on the Flathead National Forest took place in 1913, when the Forest sold timber in the Swan Valley to the Somers Lumber Company. The sale led to the first railroad logging on the Flathead National Forest (most railroad logging was done on private holdings). The 1913 and 1917 sales represented a total cut of 87 million board feet of sawlogs and 302,000 board feet of railroad ties. The logging took place between October 1914 and July 1919 (Shaw 1967:1, 123-124; J. C. Urquhart to Regional Forester, 4 February 1937, FNF Lands; Wiener 1982:35).

The Somers Lumber Company sale in the Swan Valley was located on over 9,000 acres in the Swan River drainage on the east side and at the head of Swan Lake. The Forest Service intended to list much of the land for settlement as soon as the timber had been removed, as it was considered of high agricultural value. The timber in the 1913 sale consisted of about 51% western larch, 25% Douglas-fir, 12% Engelmann spruce, 10% western white pine, and 2% red cedar. The company paid \$2 per thousand board feet, regardless of species, which the Forest Service considered a good price ("100,000,000 Feet," 1913:418; F. A. Silcox to Thomas Cooper, 23 January 1917, entry 70, box 7, RG 95, NA; Wiener 1982:35).

The Somers Lumber Company called for bids from logging contractors on the Swan Valley sale in 1913, but none were accepted. Instead, the company hired James E. Craney and his complete logging outfit to run the operation (Craney had built the spur railroad line from Kalispell to Somers). Several logging camps were set up, including one made of modular units on skids located on the logging railroad line and another made up mainly of tents. The land was clearcut and slash was burned on the sale. After the logging slash was broadcast burned, according to a Forest Service report, the small streams in the area went dry regularly in the summer (Craney 1978; Seattle RG 95, Flathead 1920-23 Inspection Reports, 9/11/22 memo; 18 December 1937 memo, Inspection Reports, Region One, 1937-, RG 95, FRC).

The Forest Service ranger stationed at Swan Lake scaled timber the winter of 1914-15 and spent subsequent winters looking after free-use permits and the government horses. About 150 men were working in the camps near the head of Swan Lake in 1918. Twelve families lived near the post office at the head of the lake, using boats to travel the lake in the summer and the "ice road" in the winter. The rest of the year a 7-mile wagon/automobile road provided the main access to the Flathead Valley (24LA149, FNF CR; Elwood 1980:200).

In 1919 a lunch fire broke out and burned over the entire sale area. Only about 5,700 acres of the 9,000 sold had been harvested; the rest of the timber burned in the fire (Stevens & Westphal n.d.:1).

Middle Fork

In 1899 H. B. Ayres wrote that an electric railroad might be feasible in the Middle Fork for hauling logs. Despite a growing demand for lumber east of the Divide, he felt that at that time none of the timber on the Middle Fork could be sold "at any price on the stump" because of transportation difficulties (Ayres "Lewis & Clarke" 1900:51, 67).

One early cordwood sale on Flathead Forest Reserve land was at Summit. The government sold approximately 253 cords to the Cut Bank Mercantile Company for 55.5 cents per cord. Timber sales continued slow but steady in the area. By 1918, small timber sales kept one man employed almost exclusively year-round out of Coram Ranger Station (14 February 1905 and 5 June 1905, "Rangers 1-1-05 to 6-30-05" pressbook, FNF CR; FNF "General Report" 1918).

Before 1908, the Forest Service offered small sales of cordwood, fence posts, and house logs to settlers along the railroad line up the Middle Fork. Timber was also harvested for administrative use as well. Timber harvest peaked in 1917 and then dropped again by 1920. In 1920, according to a report, "The area around Belton and Coram, adjacent to the Great Northern Railway and the river...has been cut over several times for logs, ties, poles, and finally for dead poles and cordwood. At present these lands are practically clear cut of merchantable timber and support only a partial stand of production." On the Coram Working Circle through 1959, 957,000 board feet were logged (FNF "Timber Management, Coram" 1961:40-41).

South Fork

In the early years, no contractor would buy stumpage above Devil's Elbow on the South Fork of the Flathead (approximately where the Hungry Horse Dam is now located) because the river flowed through a Z formed by sheer rock walls. Any logs that floated through the canyon would be battered and thus unfit for lumber (Frohlicher 1986:29).

In 1933 the Forest Service established the Coram Experimental Forest in the South Fork drainage, 7,460 acres dedicated to research. This was one of only two experimental forests at the time (see Figure 94). Active research began in 1946 to study harvesting methods and the restocking of cutover land; later other resource management issues in western larch/Douglas-fir stands were also studied. The Flathead National Forest has remained responsible for fire protection, road maintenance, and timber sales within the experimental forest (Sneck 1977:7; "Facts about Coram Experimental Forest," box 3, folder 5, MSS 84, UM; Baker et al. 1993:149).

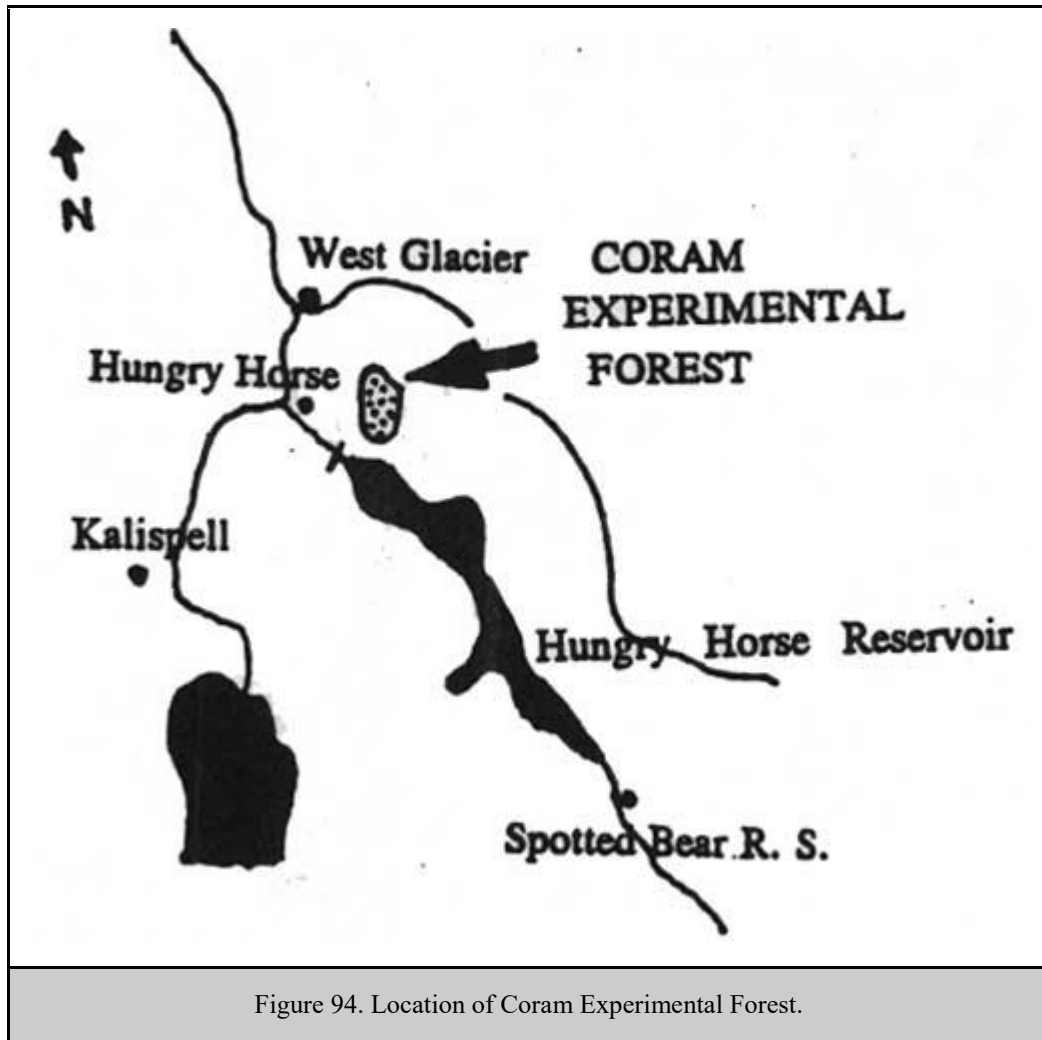
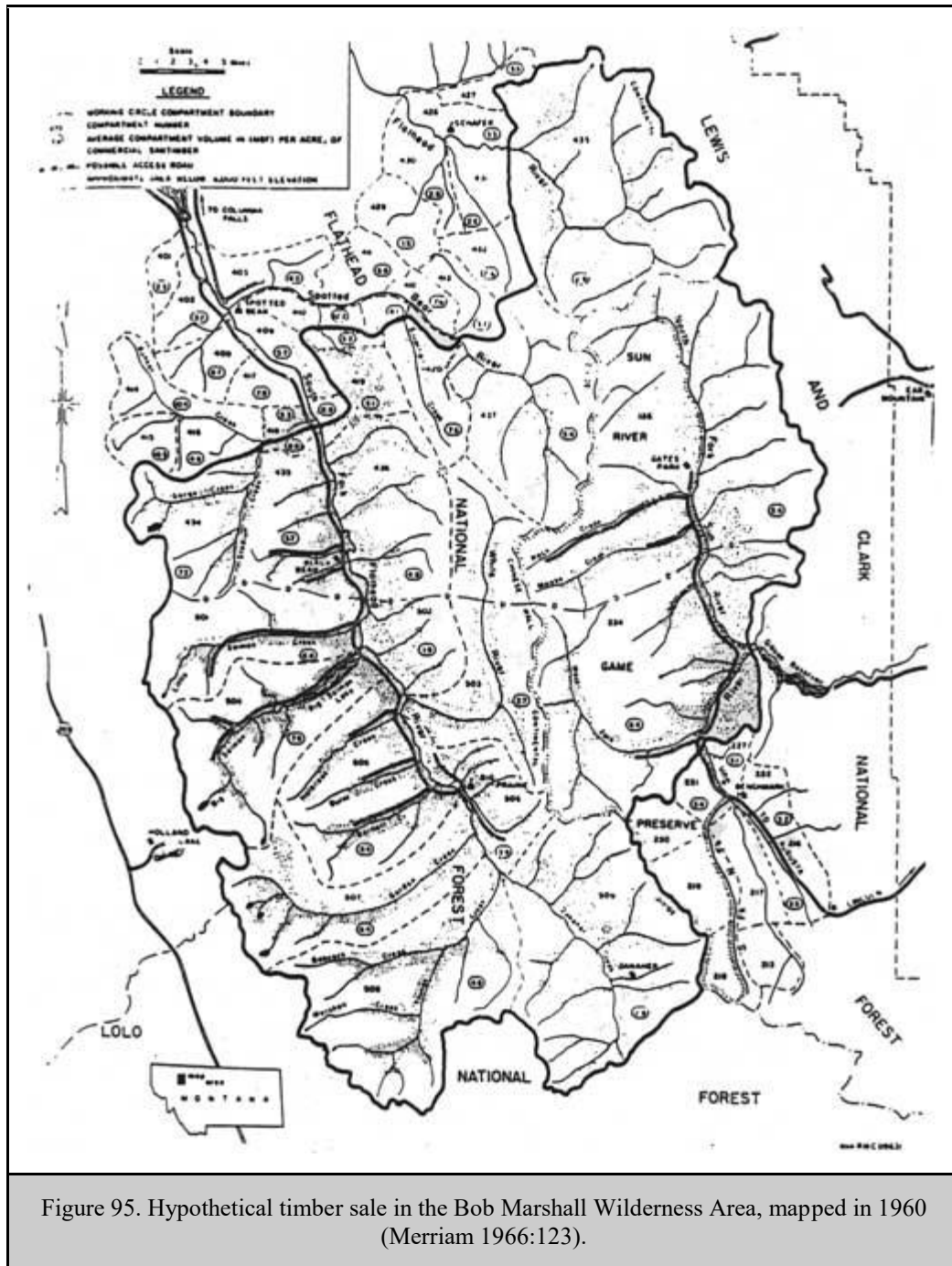


Figure 94. Location of Coram Experimental Forest.

In the early 1960s a feasibility study of a timber sale in the Bob Marshall Wilderness concluded that the area should remain a wilderness because of high costs of road construction and low timber demand (see Figure 95) (Merriam 1966:91, 96)



North Fork and North of Columbia Falls

The accessible timber on the private land in the south part of the North Fork was cut out in the early 1920s. The ranger district wrote the first timber management plan in 1925, but no development occurred (FNF "Timber Management, Glacier View" 1959:4).

One of the early timber sales on the Forest occurred in 1909 in the Canyon Creek area. The logs were hauled by four- and six-horse wagons to Columbia Falls. In a typical timber sale, the J.

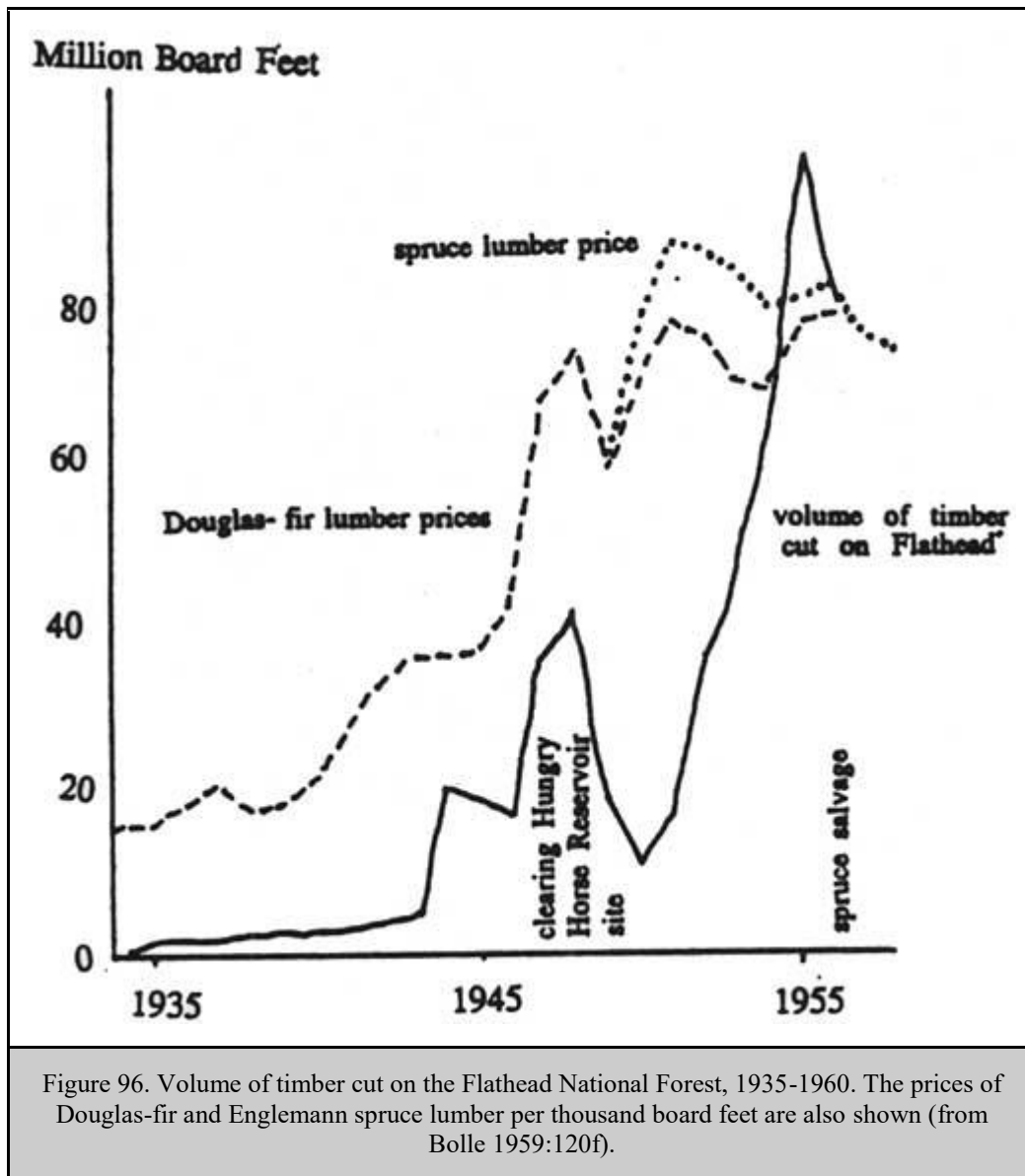
Neils sale on Cedar Creek north of Columbia Falls, the company cut the best and most accessible timber and then asked to be relieved of cutting the rest. A Forest Service inspector commented that "Neils has this habit" (Thayer 1979; 27 December 1937 memo, Inspection Reports, Region One, 1937-, RG 95, FRC).

Two mill sites selected in 1912 and withdrawn by the Blackfeet National Forest included one on Hay Creek (a small water-powered mill had been built there some years ago) and one on Red Meadow Creek (which had no value then because there were "no timber sale activities in this region"). In 1916 the Hay Creek site was recommended to be released because no mill man could be convinced to establish a mill there (FNF "General Report" 1918; FNF Lands)

Logging During and Shortly After World War II

The national timber industry expanded rapidly at the end of World War II. Overcutting on many private lands compelled private timber owners to turn to the national forests; the Forest Service entered the market economy. The public and Congress both pressured the Forest Service to produce more timber. In 1940 national forests still provided only 3.2% of the nation's timber, but by 1970, Forest Service lands accounted for 18% of the national harvest. During the war, the standards of forest practice declined because of the pressure for more lumber. The national forests were not ready to meet the demand and spent most of the war years rushing to get into production. Meanwhile, industry overcut its stands. By the end of the war, though, the Forest Service was oriented towards commercial timber sales on a scale larger than ever before (W. Robbins 1982:237; Dana 1980:175).

The Flathead National Forest's timber harvest increased dramatically during and after World War II. During the Depression, almost no timber had been sold. Shortly after the Depression, the Forest sold about 3-4 million board feet annually, but in 1944 the Flathead National Forest sold 31 million board feet. In 1955 the Forest sold 102 million board feet, representing just over 50% of the timber sold in the valley (see Figure 96) (Bolle 1959:73-74).



Much of the valley bottom lands had been cleared of timber and planted to agricultural crops. From approximately 1900-1920 railroad logging and river driving brought logs to the large mills from the relatively flat benchlands of the larger drainages. The development of tractor skidding and truck hauling directly to the mill ponds allowed logging to be done on private lands all over the valley. At the same time, national forest stumpage came into demand, and the purchase of government timber to keep operating became accepted by all mill operators after the end of World War II (Ibenthal 1952:49, 52a).

As in other periods, desirable species shifted with availability and changing marketing and building construction techniques. In 1934 the value of various species was: western white pine, \$8 per thousand board feet; ponderosa pine, \$2-5 per thousand board feet; lodgepole pine, \$1-4 per thousand board feet; other species, \$0.25-2.50 per thousand board feet. In 1940 larch provided only 2.9% of the total cut of sawlogs in Region One, largely because of its weight and

high shipping costs compared to Douglas-fir. By 1946 it was providing 21.9%; larch was used mostly in framing and concrete forms and had been approved for transmission line poles for the REA. By the 1940s, western larch was the leading species in northwestern Montana, and ponderosa pine had been increasing since 1935. Most of the ponderosa was being shipped to the midwest to be remanufactured into sash and doors. In 1946 the Forest Service announced a large sale of lodgepole from the Lewis & Clark National Forest. Before then it had been virtually unmarketable, but the demand grew (Brown 1934:209; R1 PR 963, 25 February 1946; Winters 1950:97; Sundborg 1945:14, 24; Baker et al. 1993:165).

During the war, the Forest Service offered timber sales in excess of normal sustained-yield limitations where forest products were needed to satisfy wartime requirements. To aid in the war effort, Congress made provisions for new access roads to open up new supplies of timber. Timber access roads built during 1943 and 1944 in Region One included two on the Flathead National Forest. The Emery Creek Project involved building 6 miles of road to gain access to a stand of white pine and larch. The road, built in 1944, allowed the harvesting of 10 million board feet of lumber in 1945; it was designed to run above the elevation of the flowage line of the proposed Hungry Horse Reservoir. The Skyland Road near Summit was also built in 1944 to harvest timber to meet wartime needs (Granger 1943:113; USDA FS "History of Engineering" 1990:420, 422).

The war-time boom led to the establishment of new small mills in the Flathead, many of them producing railroad ties because of the increased use of the railroads during the war (see Figure 97). The American Timber Company, for example, built a permanent mill on state land in the Lower Stillwater Lake area and cut ties during the war over a vast area. When the war was over, the portable mills switched back to cutting lumber (Cusick 1986:17).

Year	Number of mills	Total reported production
1869	-	13,000
1879	-	21,000
1889	-	94,000
1899	69	255,685
1904	36	236,430
1905	23	189,291
1906	84	328,727
1907	130	343,814
1908	173	311,533
1909	179	308,582
1910	140	319,089
1911	126	228,416
1912	118	272,174
1913	109	357,974
1914	124	317,842

1915	94	324,333
1916	103	383,884
1917	122	347,496
1918	98	335,811
1919	125	287,378
1920	124	409,667
1921	120	213,989
1922	100	303,458
1923	117	426,917
1924	100	350,335
1925	120	388,854
1926	122	378,698
1927	127	398,267
1928	119	387,879
1929	126	388,711
1930	114	296,990
1931	86	158,213
1932	72	111,048
1933	89	125,126
1934	105	171,841
1935	116	233,633
1936	126	295,233
1937	146	335,045
1938	140	221,579
1939	168	271,096
1940	168	325,338
1941	265	373,970
1942	249	433,089
1943	228	423,520
1944	256	448,498
1945	253	341,749
1946	401	413,859
1947	407	499,959
1948	434	597,944

Figure 97. Number of sawmills and lumber production in Montana, selected years 1869 to 1948 (from Kemp 1950:6).

Over 700 Region One Forest Service employees served in World War II. As in World War I, companies of Forest Engineers were sent overseas to provide timber for the troops they served. The Forest Service and other agencies contributed technical knowledge and personnel (Baker et al. 1993:163; Winters 1950:23-24).

World War II touched ground on Flathead National Forest land in a rather strange way in December of 1944. Two woodcutters working 17 miles southwest of Kalispell found a Japanese balloon on the ground containing a bomb that had failed to explode (Webber 1984:261).

On the home front, woods work was considered essential work, so local logging contractors did not face a shortage of workers during the war. Camps for conscientious objectors were located on various national forests. In the Flathead, conscientious objectors were based in Glacier National Park.

The building boom following World War II led to pressure for the increased harvesting of timber on national forest lands. After the war, the home construction industry boomed. Consumers' purchasing power had accumulated, and rehabilitating war-torn Europe also led to a market for American lumber. Timber management ceased to be largely custodial. At the end of the war, 57% of the commercial forest land in Flathead County was national forest land, and much of it was targeted for harvesting. As historian Harold Steen put it, "Following the war there was broad agreement for the need to step up the tempo of logging on national forests" (Steen 1976:280; Sundborg 1945, appendix 7).

The significant growth in the Montana timber industry began in 1946. The increase in logging was due to a national backlog of demand for housing, price increases for stumpage and lumber, and the depletion of timber in other regions. Five plywood mills moved into Montana between 1955 and 1964, three of them to the upper Flathead, partly because of the growing interest in western larch as a veneer species. The post-war timber boom ended at the end of 1956. In 1957, the number of operating mills dropped from 104 to 60 in one year (Bolle 1966:19-20).

The Flathead National Forest, like national forests around the country, increased its annual cut following World War II. The Forest reached the allowable cut it had set for itself of 60 thousand board feet for the first time in 1947. The allowable cut remained at this level until 1957, although it was exceeded some of those years. This allowable cut figure was later more than doubled due to better inventories and improved silvicultural and utilization practices. The timber program dominated the agency's workday as it never had before (Merriam 1966:70; Shaw 1967:124; Clary 1986:122, 125).

Roads had traditionally been amortized out of stumpage. The Forest Service gave priority to access road construction and later encouraged logging companies to construct access roads in return for discounts on the price of timber sales. The outbreak of war in Korea in the summer of 1950 intensified the demands for lumber and roads. Congress began to increase appropriations for road construction. In Region One, small operators could not afford to build even spur roads. The Forest Service argued that with an established road system, timber sales could be fair to large and small purchaser alike (Caywood et al. 1991:62; Steen 1976:283-84; Clary 1986:113, 117, 119).

In 1950, 40% of the sawmills in northwestern Montana depended on national forest timber in part or in whole. Generally they bought timber sales that supplied them for less than two years. The portable mills at the time moved once every 1-3 months. Most of the mills could be moved by truck or skidded by tractor and were usually located on 10-20° slopes (this helped with loading ties and lumber on trucks and allowed the waste piles to be bigger). Until 1941 they produced railroad ties only, but with World War II they all began cutting and selling lumber from the thick slabs (tie siding) that had previously been casually thrown away (Helburn 1950:31-35, 65, 68).

The Sustained Yield Management Act of 1944 authorized the establishment of sustained-yield units under which the rate, manner, and time of timber harvest would be managed in a coordinated way according to approved silvicultural practices. Mills could be provided with a constant supply of timber without resorting to competitive bidding, if required for community stability. Although much of the timber industry supported the idea, much of the public was opposed. The pressure of war-time demands for timber helped the act get enough support to be passed, but there never were any cooperative sustained-yield units in Montana (R. Robbins 1976:438; W. Robbins 1982:239; Steen 1976:250-252; Clepper 1971:284, 286).

In 1936 the Kootenai National Forest recommended that the Forest Service help support the J. Neils Lumber Company in Libby. A plan for a long-term agreement was drawn up, using national forest and private land, but it never went into effect. The J. Neils Company was one of the first to institute selective logging designed to perpetuate its forests, beginning in 1939. Because the Flathead Valley did not represent a monopoly situation similar to the J. Neils Company case in Libby, a sustained-yield unit based on the Libby example was never seriously proposed for the upper Flathead (Baker et al. 1993:145; Neils 1971:87; Bolle 1959: 172).

Insect, Disease, and Windstorm Damage to Timber

From 1910-1944 Montana's forests lost 25.6 billion board feet annually, half due to insects, one quarter to fire, and the rest to disease, windstorms, etc. The loss exceeded the cut during these years by 26%. The most severe insect infestation was that of the mountain pine beetle, first noted on the Flathead National Forest (in the Swan Valley) in 1909. It killed much lodgepole pine and also ponderosa pine. The infestation spread rapidly south, being found at Seeley Lake by 1913. This reportedly started the 1910-1918 epidemic in the Blackfoot River drainage that did a great deal of damage there (Hutchison 1952:42; Cunningham 1926:55; Moon 1991:85).

In the early 1910s the Forest Service did insect control work on the west side of Swan Lake. Ranger Baigrie Sutherland hired 14 lumberjacks for the project. They built their camp and cut and piled for burning 25,300 lodgepole trees. The infestation covered about 3,000 acres, and the cost was shared by the Forest Service, the State, and the ACM. A third of the crew were rangers who had been furloughed due to lack of funds; the rest were seasonal forest guards. They were paid \$40 a month and board (Koch 1931:1; Clack 1931:13).

A 1928 infestation of mountain pine beetle in the Canyon Creek area destroyed about 70%, or several million board feet, of the white pine there. In the early 1930s, the Forest Service planned to offer white pine in the Nine Mile Lake area as a salvage sale because of the mountain pine

beetle damage ("Insect Damage" 1931:6; "Result of Bark-Beetle" 1935:5; FNF "Timber Management, Glacier View" 1959:40).

In 1925 the mountain pine beetle was also damaging lodgepole pine on the upper South Fork. In 1927 Douglas-fir bark beetle had reached almost epidemic proportions east of Columbia Falls and a long way up the Middle Fork in the vicinity of a December 1924 blowdown. Mountain pine beetle was also present in the white pine north of Elk Park Ranger Station on the South Fork ("Summary of Forest Reports" 1926:21; Wilfred W. White memo, 15 August 1927, Flathead Inspection Reports, Region One, RG 95, FRC).

In the early 1930s large volumes of mature spruce were infested by insects and lost in Gregg and Alder Creeks, and some lodgepole pine was lost to mountain pine beetle in other years. Diseases took their toll too. By the late 1950s, white pine blister rust was killing white pine and whitebark pine in the Kalispell working circle. Also, Douglas-fir needle cast caused losses to the Christmas tree industry. Dwarf mistletoe was present in almost every pole and sawtimber stand in the working circle and causing serious losses (FNF "Timber Management, Kalispell" 1960:39; Ibenthal 1952:42).

Western spruce budworm affected the Swan Valley and the South Fork some between 1948 and 1971, but the damage was not as extensive as elsewhere in the northern Rockies. The host species are primarily Douglas-fir, Engelmann spruce, and western larch. The earliest outbreak on the Flathead National Forest was on Coram Ranger District in 1933. Some other forests were aerially sprayed to control spruce budworm, but the Flathead National Forest was not (Johnson & Denton 1975:1, 17, 26, 46, 89-90, 141-143).

There had been a number of severe windstorms on Flathead National Forest lands prior to World War II, such as one in 1923. The hardest-hit districts then were the Lower Swan and Lower South Fork, where trails, phone lines, and roads were blocked. In some areas, such as a 220-acre stand near Emma Creek, less than 5% of the timber was left standing. At that time, the Forest Service stated that it was simply impossible to salvage the timber because of the great expense. A successful salvage sale did occur in 1906 when the John O'Brien Lumber Company cut almost 1 million board feet along the east and west shores of Flathead Lake on the Flathead Indian Reservation. The sale had resulted from a blowdown earlier that year (Wolfe 1924:12; Historical Research Associates 1977:30-31).

By 1949, however, a number of conditions limiting blowdown salvage had changed, and after a severe windstorm in that year the Forest Service initiated a huge salvage logging program. On November 9, 1949, an event occurred that was soon known to foresters as "the '49 blow." High winds ripped through the forests of western Montana, northern Idaho, and eastern Washington, blowing over millions of board feet of sawtimber, mostly Engelmann spruce, Douglas-fir, and western larch. In the Lindbergh Lake area alone, for example, the trees on about 700 acres were blown down (Montana Conservation Council 1954:23).

In the summer of 1950 a salvage logging program got underway, aided by the slowing down of work on the Hungry Horse Dam. The Forest Service located blowdown areas by plane, mapped and cruised the affected areas, and scouted access routes on the ground. By that fall roads were

being built. Timber was sold to the highest bidder, usually for less than the going price for standing timber. Logging companies found that Engelmann spruce that had been blown down in the 1949 windstorm was good lumber which - because of its lighter weight - could be shipped cheaper than fir and larch (Montana Conservation Council 1954:23; Whitney 1983).

The 1949 blowdown led directly to a severe spruce bark beetle epidemic in the northern Rockies. About 80% of the threatened spruce was on federal land. The first hints of the epidemic came in July 1951, when Fred Burnell was sent to Canyon Creek in the North Fork to locate roads for a proposed sale of spruce there. He found that about 25% of the mature trees were dead or dying. An entomologist reviewed the situation and "determined we were in trouble," finding that the spruce bark beetle had infested all mature spruce stands in Region One. As a result, said Burnell, "we in the West spent the next 2 or 3 years locating, designing, and constructing spruce bark beetle roads" ("Loggers Intensify" 1953:4; USDA FS "History of Engineering" 1990:538).

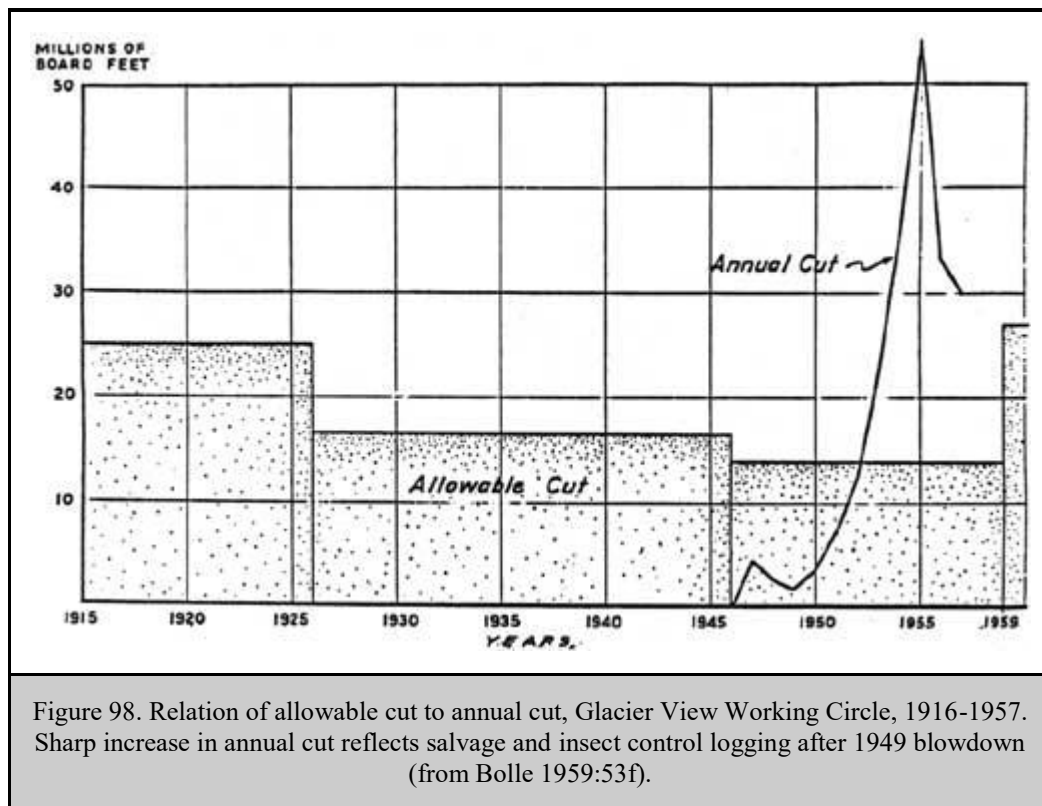
The Forest Service controlled the beetle by large-scale logging. Logging as a control method was based on the fact that beetle broods drowned in sawmill ponds or burned in slab fires. This logging led in turn to a flood of spruce on the market. The Forest Products Laboratory and the lumber associations helped obtain consumer acceptance of spruce by testing spruce and recommending it. The marketing of spruce was successful; the Flathead National Forest reported that the large mills in the valley were competing for spruce to "sweeten their larch-Douglas-fir diet." By 1959 spruce was competing with white pine and was being marketed as suitable for decking and "knotty pine" paneling (R1 PR 1114, 29 August 1952; Montana Conservation Council 1954:24; FNF "Timber Management, Kalispell" 1960:49; Bolle 1959:74, 128).

In 1953 Congress appropriated over \$8 million to build roads to access stands of insect-infested or threatened spruce in northern Idaho and western Montana. Contracts under this program included 35.5 miles on the North Fork of the Flathead, 18 miles on Whale Creek, 6.5 miles on Teepee Creek, 6 miles on Coal Creek, 18.4 miles on Tally Lake, and 9 miles along Good Creek, all on the Flathead National Forest. By March of 1954 the Flathead National Forest was offering 120 million board feet of spruce in 18 sales at prices "set to expedite logging." By the fall of 1956 Region One, in cooperation with private industry, the U. S. Bureau of Entomology, and state foresters, had logged approximately 2 billion board feet of spruce and had constructed 437 miles of roads as part of the salvage program. The Engelmann Spruce Bark Beetle Salvage Program operated on the Kootenai, Flathead, Lolo, Kaniksu, and other national forests in cooperation with the wood-products industry. One participant felt that the program "welded the people in the Forest Service into a 'family' mode that...created an *esprit de corps* very seldom seen in public-sector organizations" (R1 PR 1141, 28 August 1953; R1 PR 1148, 11 March 1954; 3 October 1956, 1380 Reports - Historical - Reports to the Chief, RO; Baker et al. 1993:320-321).

In the North Fork, the spruce bark beetle reached epidemic levels between 1952 and 1957. Engelmann spruce in the North Fork represented 12% of the total spruce available in the state of Montana. In 1949 about 1.9 million board feet were cut on Glacier View Ranger District. In 1955 the harvest was 54.2 million board feet, but by 1956 it had declined to 33.1 million, reflecting the decline of the spruce bark beetle operations. In the North Fork, Ford Work Station and Ninko Cabin were used by timber cruisers in the winter of 1954-55 as part of the logging

program there. Men worked 10-day hitches on snowshoes (Bolle 1959:23, 33; "North Fork History," GVRD, ca. 1981; Hutchens 1989).

The spruce bark beetle control logging program led to timber harvests well above the sustained-yield figures for districts. On Glacier View Ranger District, for example, the sustained yield was set at 14 million board feet a year, but in 1955 the district cut over 54 million board feet (see Figure 98) ("Area Lumber" 1956:4). The district had harvested well below the allowable cut, however, through the 1940s.



The increase in the allowable cut in the North Fork in the 1950s was due to the reduction of the minimum merchantable diameter from 14" to 11", the development of markets for spruce, subalpine fir, lodgepole, and whitebark pine, technological advances in logging machinery, and adjustments in timber type acreages combined with changes in forested areas from non-commercial to commercial forest ("North Fork History," ca. 1981, GVRD).

At the first North Fork sale of dead spruce, only a few large operators were allowed to bid, and they were reportedly in collusion to submit no bids and force the government to let them take the spruce at zero stumpage just to haul it away. One of the operators did bid, however. He got the first sale, and after that there was a strong market for salvage spruce (Bolle 1959:75, 125).

In the late 1960s another spruce bark beetle infestation spread through most of the remaining stands of Engelmann spruce in the North Fork. Units that had been left standing along major stream bottoms were included in timber sales, often bordering clearcuts from the previous

infestation. These blended together to look like continuous clearcuts. In addition, adjacent windthrows often converted units into clearcuts.

The spruce bark beetle program led to record-breaking timber sales on other Flathead National Forest districts besides the North Fork. For example, the Sullivan Creek sale on Hungry Horse Ranger District, completed in the late fall of 1958, was for 21 million board feet. On the Kalispell Working Circle, roads were built into many drainages to salvage blowdown after the 1949 storm and remove insect-infested timber. In the early 1950s insect control was tried by spraying the spruce bark beetle, but the results were inadequate. Trap trees also were ineffective. Control by logging worked best, except for occasional localized outbreaks (Arvidson 1967; FNF "Timber Management, Kalispell" 1959:4, 39-40).

Approximately 1,000 acres on the east slope of the Mission Mountains were also severely affected by the 1949 windstorm. Salvage logging operations were authorized, but the logging companies did not think it an economically viable proposition. By 1952 the spruce bark beetle was epidemic and was spreading to live trees in the area. The Forest Service and the Northern Pacific Railroad then carried out joint control-logging operations within the Primitive Area and along its eastern boundary. Eight roads entered the primitive area and were blocked after the logging was completed in 1958. The completion of Highway 209 through the Swan in 1959, and the development of a cost-share road construction agreement between the Forest Service and the Northern Pacific, led to increased timber harvesting and road development throughout the Swan. In the 1950s, the annual cut in the Swan averaged 14.6 million board feet per year. The beetle epidemic was under control by 1957, partly due to natural enemies (Wright 1966:18, 51-52; Craney 1978; FNF "Timber Management, Swan" 1960:14, 32, 40).

Logging in the 1950s

During the 1940s, small- and medium-sized mills continued to gain in importance relative to the large mills. In 1941 the Somers Lumber Company changed its name to Glacier Park Company, Somers Lumber Division. The mill was shut down and dismantled in 1948 or 1949. The president of the Great Northern at the time said it closed due to a diminishing supply of timber on company lands and the need to conserve remaining standing timber for the future production of ties and lumber (they had a 75,000-acre tree farm on cutover lands in the Flathead Lake area). After a few years the DeVoe Lumber Company started a mill cutting dimension material in the Glacier Park Company buildings, but the mill was destroyed by fire in 1957 (Elwood 1976:26-27, 36; FNF "Timber Management, Kalispell" 1960:49).

In 1952 the wood resources industry accounted for 12-15% of the total economy of the Flathead Valley. The small mills in the Flathead were cut off from the public timber by the cost of building access roads and the high cost of purchasing equipment to log the timber. With large sales, the government could capitalize the cost of construction out of the stumpage of the sale. The small mills depended on small private woodlots and on the limited local market for rough lumber, selling their excess to the large mills. The large mills, on the other hand, depended on sales of public timber and on buying from large private land owners, such as railroad companies, and some small land owners. Small mills were typically portable, operated in the summers only,

used old equipment, and produced ties, 2 x 4s, and rough lumber for the local market or to sell to the larger mills for finishing (Bolle 1959:71-73; Ibenthal 1952:15).

The decline in lumber prices in the fall of 1957 closed down most of the portable mills. In 1959 the headsaw capacity of the sawmills in the Flathead was more than the computed sustainable cut for the timber lands. Lumber prices rose in the spring of 1959, and logging activity correspondingly increased. In 1960, the sawmill capacity was about twice that of the allowable cut on the Flathead National Forest. There were 36 sawmills and four plywood plants in the Flathead National Forest area in 1964 (Bolle 1959:8; FNF "Timber Management, Kalispell" 1960:49; Shaw 1967:1; FNF "Timber Management, Swan" 1960:14).

Logging Methods

Timber Cruising and Scaling

In the late 1890s timber inventories were done quickly in order to cover large areas of ground. In 1908 Region One issued instructions for reconnaissance work. "Extensive reconnaissance" selected areas for logging units and roughly calculated growth. "Intensive reconnaissance," on the other hand, provided data for future timber sales and working plans (Baker et al. 1993:61-62).

During and after World War I, rangers "cruised" (inventoried) potential timber sales on snowshoes in the winter. Cruising involved estimating the volume-per-acre, the age and quality of the timber, drawing a drainage map, and selecting locations for river landings, log chutes, and possibly flumes. Once truck hauling had been developed, cruisers started locating logging roads instead of river-drive features (Shaw 1967:126).

In the 1930s and 1940s, cruisers worked individually. Most used the line-plot method with a 10% coverage. The cruiser would pace his line, measuring tree diameters and estimating the number of 16' logs to an 8" top in each plot. He would also compile a map showing natural features, slope, timber types, etc. Cruisers were expected to finish their strips of 40-80 plots before coming in at the end of the day; many came in late. At night the cruiser computed his cruise data by using volume tables and completed his map to agree with the maps of other strip lines. In 1949, a Region One forester commented that the cruisers in the Swan Valley were "literally festooned with equipment" (Taylor 1981; FNF Lands).

Three-man crews were used for marking trees. One man did the blazing, using a tool with an axe blade on one side and a US stamp on the other. On trees to be cut, he would make a blaze 5' above the ground and another about 1' above the ground (the lower one was branded). Another man carried the diameter tape and called out the species and diameter. The third man was the recorder; he helped select the trees and estimated the number of 16' logs in each one. Later, one recorder worked with two measuring and blazing teams (Taylor 1981).

Tree scaling involved determining the board foot volume in standing trees (measuring the diameter at breast height and estimating heights). By the mid-1940s logging had increased so much that there was a shortage of scalers, so the Forest Service began doing some sales by the

"tree scale" method. After the trees had been felled and bucked, 10% of the trees were checked. Scalpers would add up their scale book by hand either in slack times or in the evening. Scalpers recorded the tree species, log length, net scale, and deductions for defects in order to determine the price to charge for harvested timber. They worked where the tree fell before it was skidded, at the landing while the chokers were being unhooked, or on the slip at a mill deck. Later, some scaling was done on trucks, and then at the mill yards (see Figure 99) (Taylor 1981, 1986).



When tree scale sales began, the trees had to be numbered the same as the recorders' numbers so that a random scale of 10% of the logs could be done. Marking methods evolved from writing on the trees with a lumber crayon, writing on the upper blaze, writing on waxed cardboard milk bottle caps and nailing them to trees, and using aluminum tags with embossed tree numbers, to the use of the paint gun beginning in the 1950s. Companies branded the logs with an identifying mark - the Somers Lumber Company brand was the Diamond N - and with the year (Taylor 1981; Elwood 1976:30; "Flathead Logger" 1978:16).

Harvesting

On private land, clearcutting was the general harvesting method. A writer in 1934 commented that traditional practices were generally "based upon immediate profits and the exploitation of the forest with little or no thought to the future." He cited the disadvantages of selective logging as: there was no marked advantage in cutting only the largest trees for some products (cross ties, poles, etc.); more care was needed to remove the timber; the immature timber had to be protected and taxes paid on it; it was not useful in even-aged forests or dense forests; and it could not be practiced in areas cut under enforced liquidation of standing timber assets. Heavy taxation encouraged liquidation of standing timber assets (Brown 1934:104, 111, 206).

On the national forests, selective cutting was practiced at first, largely because there were no markets for small trees. At the turn of the century, the waste of timber in the woods and in the sawmills was extremely high, as the emphasis was on sawlogs, not small-dimension material. Loggers then shifted to clearcutting because some species were shade intolerant - they would not reproduce under selective cutting - and were susceptible to windthrow because of shallow roots. In 1939, the Forest Service required contractors to leave behind trees no less than 15" in diameter in order to encourage reproduction and make a second cut possible in later years. Clearcutting was favored, however, when an area was being cleared of insect or disease, and to help with slash disposal. Clearcutting became the dominant method after World War II on private lands and by the mid-1960s on Forest Service land (Winters 1950:71, 93; G. Robinson 1975:76, 83; FNF "Informational Report" 1939).

Under its Chief, Gifford Pinchot, the Forest Service became a consulting agency working with lumber firms on matters relating to efficient usage of forest products. From the beginning, the Washington Office told the Regions to manage with a view toward subsequent harvests. The question of harvesting method (selective cutting versus clearcutting) was debated from the beginning. The reforestation of cutover and burned lands was given high priority because of the fear of timber famine and the belief that "wood was the foundation of civilization" (Little 1968:6; Clary 1986:47, 50, 52).

In 1915, Region One forest examiner Donald Brewster made the following recommendations for timber harvesting methods by species:

- white pine - clearcut mature stands, shelterwood immature stands
- larch/Douglas-fir - heavy selection or seed-tree clearcut
- ponderosa pine - selection cut
- Douglas-fir - clearcut with seed trees
- cedar, hemlock, white fir - not merchantable (Wiener 1982:35)

Foresters advocated removing logging debris from timber sales early on because the removal would reduce fire danger. A 1913 logging manual recommended piling and burning the slash. Contractors were required to burn slash on most sales (Bryant 19 13:26, 28; FNF "Informational Report" 1939).

Dozer skidding of logs led to dozer piling of slash because dozers produced much more slash than did horses. It was learned that the scarification caused by dozer piling improved regeneration. Reportedly Art Whitney, who worked for the Flathead National Forest in the Swan Valley, discovered this by noticing that loading areas torn up by horses had good regeneration. In 1947 he first tried scarification as a deliberate technique, and soon it was being practiced all over the Region (Whitney 1983).

Planting trees after logging was first attempted on the Flathead National Forest in 1909, but it was not done to any great extent or very successfully until the 1930s with the influx of CCC labor. Most stands were reforested by natural seeding following selective cutting. Thinning also helped productivity and was practiced on the Flathead (Shaw 1967:2).

In 1907, Supervisor Bunker of the Lewis & Clark South National Forest held a ranger meeting at which one of the topics of conversation was a proposal from the Washington Office that old burns be seeded or replanted. According to one participant, "It was discussed all right, generally without the 'dis,'" and the rangers voted down the proposal. Despite this early protest, in 1908 five-year planting programs began on national forests, and in 1909 the first trees were planted at Essex. This planting consisted of 297,000 seedlings on 655 acres. By 1917, Region One was planting slightly more than 4,000 acres per year (Clack 1923a:7; Shaw 1967:3; Montana Fish & Game 1975:51; Clary 1986:52; Silcox to the Forester, 10 May 1917, 1380 Reports - Historical - District 1, RO).

Under the Knutson-Vandenberg Act of 1930, the Forest Service could require purchasers of timber to make cash deposits to cover the cost of planting, seeding, or thinning in order to improve the future timber stand. This helped with reforestation and improved silvicultural practices in the national forests. "KV funds" could only be used on the sale areas from which they were collected. The plan for reforestation or stand-improvement work was determined for each sale area as part of the presale planning (G. Robinson 1975:74-75).

In 1938 the first Federation of Women's Clubs tree planting in Region One took place on the Flathead National Forest on some 40 acres of burned area along Highway 2 west of Belton. The Savenac nursery provided the trees and any planting funds not contributed by the Women's Clubs ("Planting Progress" 1938:6).

Sawyers working in the woods had a variety of tools at their disposal, from felling axes and broadaxes to crosscut saws, wedges, mauls, and sledges. Sawyers working with cross-cut saws were paid relatively well for their skill, either by the amount cut or by the day. In the 1920s, a cross-cut team needed to cut 10,000 board feet a day to make good wages (see Figure 100) (Montgomery 1982).



Figure 100. Sawyers felling a Douglas-fir with a cross-cut saw, standing on springboards (Brown 1934:11).

On logging sales where the logs were destined to float down rivers to a mill, western larch was "long butted." The stumps were often left 3' high or higher because the butts were heavy and logs would sink otherwise (see Figure 101). Leaving a long butt by cutting from a springboard also eliminated the twisted grain, pitch pockets, and heavy sap that were more prevalent in the first few feet above the trunk (7 January 1924 memo, Flathead Inspection Reports Region One, RG 95, FRC; letter from Al Reid to Gary McLean, January 1985, FNF CR).



Figure 101. Larch butts discarded on ACM sale, Seely Lake, Montana, 1908 (photo by W. J. Lubken, courtesy of USDA Forest Service, Region One, Missoula).

Sawyers would first decide which direction they wanted to fall the tree. They would then cut two notches large enough to hold a springboard in place on each side of the tree at a 90° angle from the direction of fall, would make an undercut notch to guide the tree's fall, and then would fall the tree using a two-man crosscut saw. The use of the springboard eliminated at least one cut. As chainsaws came into use in the 1940s and 1950s, springboards were no longer used (24FH466, FNF CR). After the sawyers felled and cut the trees into shorter lengths, "swampers" would trim and limb the short logs with axes.

Skidding and Hauling

In the northern Rockies, a variety of methods were used to skid logs from the felling site to the railroad, river, truck, etc. In the 1930s, these methods included tractors, horse skidding, hand

logging, cable skidding, chutes, flumes, and combinations. From there, the logs were transported to the mill via railroads, horse-drawn sleighs, "big wheels," drays, river driving and towing, trucks, chutes, flumes, and combinations (Brown 1934:119; "Personal Experience Record of Capt George W. Slack," SC 126, MHS). Logging was generally done during the fall and winter months. In the Flathead, logging companies typically could expect 40-60 days of good sleighing conditions per year.

At first mills were built near steep wooded slopes and the timber was slid down long chutes to the saw teeth; the mill was moved when the supply was exhausted. Next, the mills relied on log drives. Logging railroads gave access to more remote areas.

Log chutes were used to a great extent on private land, and some were built for national forest timber sales. The chutes were generally made of two hewed logs and were kept greased with axle grease, lard, water, ice, or snow. Chutes transported logs from skidways to a landing at or in a stream or to a railroad landing or log dump. They generally ran along the bottom of draws rather than cutting across sidehills. The logs were moved by gravity or trailed by horses and tractors on more level ground. Chutes were used extensively in the steep gulches common in western Montana, Idaho, and British Columbia. In other parts of Montana flumes with water running through them were often used to transport logs. At least one Flathead Valley operation used a flume, that of the Empire Lumber Company in the Smith Valley in the 1920s. In the early 1920s the Montana Lath Company reportedly used a 6'-wide flume between Half Moon Lake and Lake Five to move logs to their mill on Lake Five. By the end of World War II the use of flumes and chutes in the northern Rockies had almost disappeared (Brown 1936: 132, 134; Elwood 1980:162; Sztaray-Kountz Planning 1994:12; Winters 1950:95).

Slides, or channels used to transport logs, crossties, firewood, etc., were used frequently in Montana. They were built down the valleys of streams or down the slopes of mountains. Earth slides were used for short distances on steep grades (these were basically a furrow in the ground). Timber slides were made of round or sawed timbers supported on cross-skids. On low grades a path for the animals towing the logs would be cleared. Chutes were used as the terminus of a skid or pole road where the logs were dumped into a body of water (Bryant 1913:230-231, 235).

Sometimes the chutes were used for unanticipated purposes. In 1891, on a Butte & Montana Commercial Company sale, Frank Miles and two other men were cutting ties and sawlogs on a mountainside. One of the men was killed by a falling tree. The only way to get his body out was to put it in a coffin and run it down a log chute (Johns IV:118).

Horses were used almost exclusively in the woods in the Flathead, but there were some ox teams in the early years (see Figure 102). For example, the Baker brothers used both oxen and horses in the Trego area in the early 1900s. The bull skinner could talk to the oxen and simply tap them on the horn or head with a stick to direct them. Jim Sullivan drove an ox team to log in a swamp in the Swan in the winter of 1909-10 because horses could not work there. Horses seldom lasted as many as 10 years on a logging job. Ruts for the sleigh runners were watered so the resulting ice would help the sleigh move more easily. On corduroy roads, the logs were generally greased with axle grease. Horses also "snaked" logs over crude trails or skid roads to their destination.

The use of horses persisted in the Inland Empire longer than elsewhere in the northwest, into the 1920s and 1930s (Wilke 1983; Simpson 1967:114; Elwood 1976:27; Craney 1978; Hudson et al. ca. 1981:189). Mules were not used because they were not big enough for logging.



Figure 102. Frank Motichka and logging crew, ca. 1910 (courtesy of Stumptown Historical Society, Whitefish).

Sleighs averaged about 10,000 board feet to a load, about 8-9 logs high. The longest logs hauled were 24'. In the early years, crosshaul teams pulled logs up into decks ready for loading on sleighs or railroad cars. They also loaded the logs onto the sleighs or cars. A good crosshaul team needed very little direction; they were trained to voice commands (see Figure 103). Sidejammers began to be used for loading in approximately 1913 (Wilke 1983; Craney 1978).



Figure 103. Loading logs on to GNRR 40 miles west of Kalispell, operation of Edwin Conrad, Somers Lumber Company contractor, 1939 (photo by E. F. Rapraeger, courtesy of USDA Forest Service, Region One, Missoula).

Logs were generally hauled in the winters over snow. Loggers hauled some logs in the summers, mainly on flat land using "big wheels." The big-wheel drivers, known as foggie knockers, used slip-tongue wheels, 8-12' in diameter, to haul the logs with the back ends dragging to the river (Elwood 1976:28).

On the Somers Lumber Company 1910s sale in the Swan Valley, horses skidded logs out of the woods. They hauled logs in small groups on one set of runners ("hot logging"). Cross-haul teams then decked the logs for loading on to a sleigh or a railroad car. Once at Swan Lake or the Swan River, the logs were decked along the shore or on the ice. Boom logs encircled the decks of logs when the lake opened, and they were then towed to the foot of the lake. From there, they floated 16 miles to the pond above the dam in Bigfork, were helped over the top, and then were boomed and hauled by barges to the mill at Somers (Steel 1981:4-5B).

One of the first logging railroads in Montana, built around 1900, was located in the Bonner area. Rather than relying on the weather (enough snow for hauling, enough water for river drives) to provide the mills with logs seasonally, railroads could deliver logs year-round. Railroads gave access to areas without streams, and the logs were delivered clean and unbattered (versus via chutes and river drives). By 1910 there were approximately 2,000 logging railroads in the United States with about 30,000 miles of track (Morrow n.d.:70; Hudson et al. ca. 1981:193-194).

The Somers Lumber Company sale in the Swan was the first sale on the Flathead that used non-horse power for skidding - the contractor used a Lidgerwood skidder for skidding logs and loading them onto the railroad. The Lidgerwood at Swan Lake was mounted on a flatcar. It

carried a boiler that supplied the steam for two steam engines. One engine hauled logs in from 1000', while the other loaded logs on railroad cars. The loader used cables attached to spar trees and could log a circle 2000' in diameter (Craney 1978).

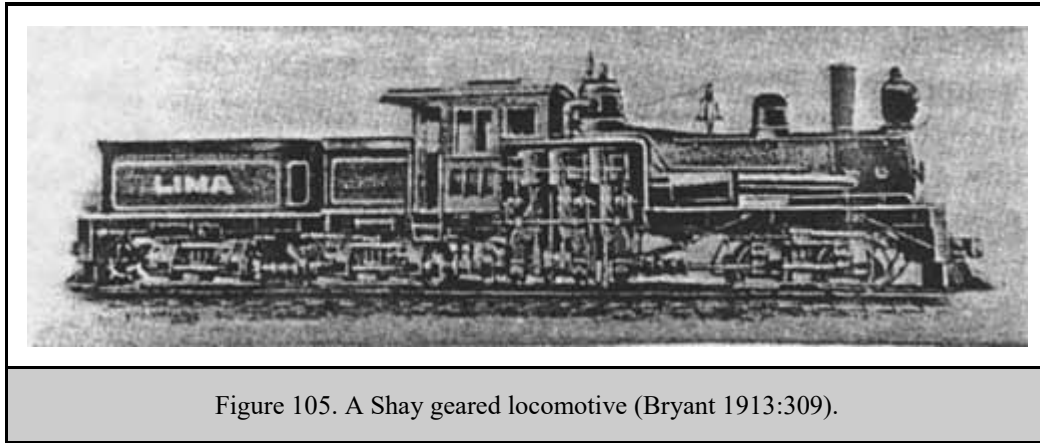
The topography of the Flathead National Forest generally did not lend itself to railroad logging. Private forest lands were generally on less steep terrain. In the 1910s and 1920s, the Stillwater, Whitefish, Smith Valley, and Swan drainages were logged by railroad. At least ten lumber companies in the Flathead Valley used a logging railroad. The J. Neils Lumber Company in Libby and its predecessor had approximately 25 miles of logging railroad track (see Figure 104) (Bolle 1959:48; Linrude 1981; Adams 1961:161).

Lumber Company	Location of Sawmill	Miles of Track	Dates of Operation
W. H. Best	Bigfork	28	1937-47
Columbia Lumber Co.	Columbia Falls	1	1917
Empire Lumber Co.	Kalispell	3	1926-30
Enterprise Lumber Co.	Kalispell	2	1913 (possibly other years)
Hutchinson Brothers Lumber Co.	Whitefish	2	1909-28
Isaacs Lumber & Lath Co.	Kalispell	- -	1928-29
Somers Lumber Co.	Somers	47	1914-42
John O'Brien Lumber Co.	Somers	12	1901-1906
F. H. Stoltze Land & Lumber Co.	Columbia Falls	20	1933-46
State Lumber Co.	Columbia Falls	20	1913-33
A. O. Westburg Lumber Co.	Columbia Falls	3	(1915)-1932
Dawson Lumber Co.	Libby	8	(1910)-1911
Libby Lumber Co.	Libby	23	1911-1918
J. Neils Lumber Co.	Libby	25	1918-56

Figure 104. Logging railroads in Flathead Valley area. The miles given are the highest of record (from Adams 1961:161).

The Shay engine was the most popular geared engine in the West for logging railroads (see Figure 105). The company built 2,761 engines between 1880 and 1945. The Shay locomotive was favored in the Flathead because of its excellent pulling power. It ran well on poor tracks, it operated at about 6-12 miles an hour, and it carried about 6,000 BF of logs per car. According to Emmanuel Buck, who worked in the early 1920s on the Half Moon logging railroad, it took 6 men to load the cars pulled by the Shay: an engineer, a fireman, a brakeman, two "hookers" manipulating the jammer (loader), and the jammer engineer. The derrick-like jammer was

skidded up and down the tracks loading one car at a time (Elwood 1980:160; Bryant 1913:308; Montgomery 1982; "Trains" 1987).



The Somers Lumber Company used a 42-ton Shay engine built in 1904 and flat cars on its large sale in the Swan Valley on national forest land. The engine was later used for logging at Dayton, then by Stoltze, and is now on display at the head of Nucleus Avenue in Columbia Falls (Stevens & Westphal n.d.:1-3; Kehoe 1982; Craney 1978).

During the Depression railroad logging almost disappeared because it was so expensive to operate. Bottomlands had been cut over, and the technology was still inadequate to log mountainous terrain. Horse logging continued to be popular in the Flathead up to World War II, however (Bolle 1966:18; Morrow, n.d.:72; Whitney 1983).

By 1913 several companies in Montana owned steam donkeys, which used steam power and cables to haul logs onto landings, sleighs, and rivers, but they were not used in the Flathead until 1923. Donkey engine is the term for all kinds of power logging machines (cable, high lead, etc.). Compared to horses, they had more speed and power, could work on rougher slopes, and could work in extreme heat and cold, but skidding with donkey engines was difficult on steep ground (letter from Al Reid to Gary McLean, January 1985, FNF CR; Morrow, n.d.:72; Hudson et al. ca. 1981:189-90; Brown 1936:34, 80; Elwood 1980:160).

River Drives

River drives in the Flathead area ranged anywhere from 10 to 100 miles in length (see Figure 106). The cost of stumpage varied according to the distance to driving streams and to mills. Mills such as Somers Lumber Company that were dependent on river drives would shut down for a time during the winter until breakup in the spring. There was generally no logging during the summers in the Flathead because the heat and hauling over bare ground would have killed the stock ("Personal Experience Record of Capt. George W. Slack," SC 126, MHS; "Corporate History" n.d.:4; Elwood 1976:27; Suchy 1978:11).



Figure 106. Logs in Stillwater River near Olney, 1924 (photo by K. D. Swan, courtesy of USDA Forest Service, Region One, Missoula).

When there was not enough snow (or water) for a river drive, splash dams were used to hold back the natural flow of water on the headwaters of streams. Splash dams used for logging were generally built of logs. Crib dams were built of buttresses and wings (which were usually filled with stone to hold them down). They had sluiceways designed to allow the complete drainage of the reservoirs in one big "splash" controlled by lift gates raised and lowered by prybars (see Figure 107) (Bryant 1913:350-351).

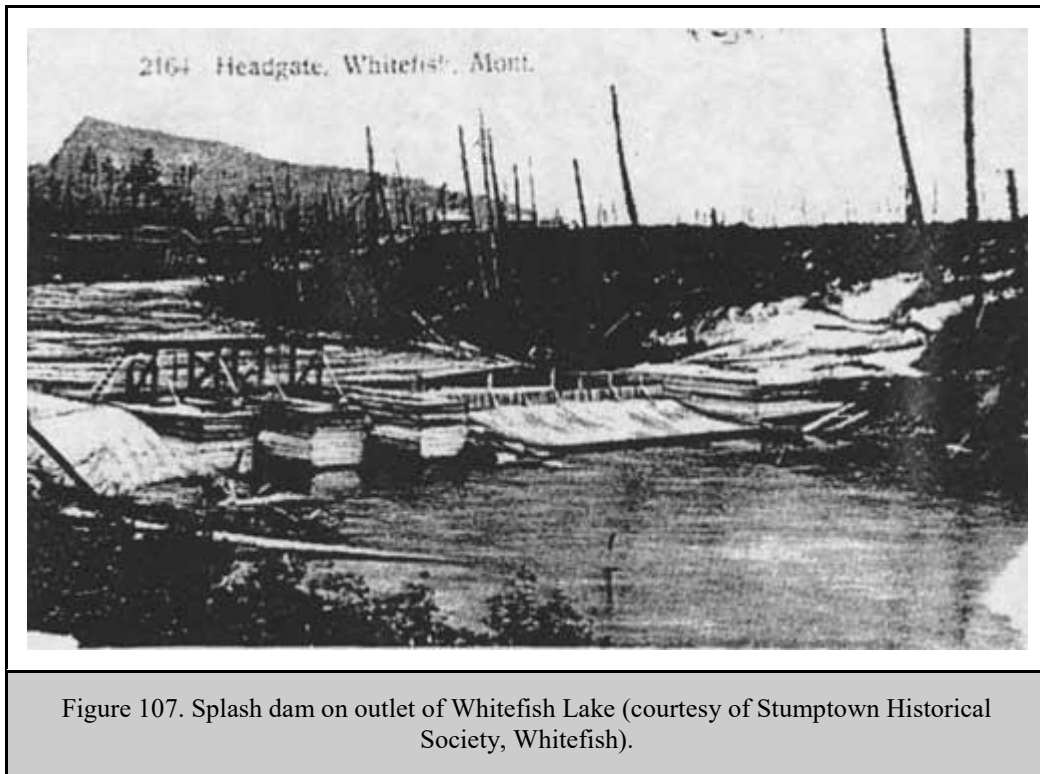


Figure 107. Splash dam on outlet of Whitefish Lake (courtesy of Stumptown Historical Society, Whitefish).

The splash dam at the outlet of upper Stillwater Lake was made of cribbed logs 8-14" in diameter. Logs would get stuck in the canyon below and block the stream, so men would be stationed along the canyon to release any log jams. They would use a phone to call the man at the boom to shut off the flow of logs, call the dam to shut it down, and then "blow out the log jam and then start swishing logs down through there again." Mother splash dam located on North Lost Creek in the Swan Valley was used during the Somers Lumber Company timber sale in that area in the 1910s. Splash dams on Good Creek (Trixie Dam) and on Tally Lake were built for Stillwater log drives. Dickey Creek below Essex had several splash dams to carry logs to the mill near the railroad crossing on Dickey Creek (24FH48, FNF CR; Cusick 1981; Shaw 1967: 126; Taylor 1986).

In 1905 the Northwest Lumber Company had logs lining the banks of the Stillwater River for 125 miles but did not have enough water to finish the river drive. The company increased the height of the dam at Tally Lake's outlet. To get the logs to the mill they ended up building another splash dam about 20 miles up the Stillwater. After this, company men scouted the Stillwater River, bought 320 acres near the mouth of the lower lake, and built a large dam there to ensure that they would have enough water on future river drives (C. I. O'Neil, "Kalispell, Montana" (1947), MSUA:30-31).

During the spring highwater river drives, "river pigs" would snake, blast, and guide the logs downriver. River pigs followed the drives every spring all over the area. Once the logs reached the millpond, they were sorted according to the bark marks stamped on the side of each log. On Flathead Lake each company's logs were sorted into a boom and then pulled to the mill by steam tugboats. The men used peaveys for rolling the logs. Other tools included a pike pole, used to

guide the logs in a pond or river. In 1909 men working on Flathead area log drives received \$3 and four meals a day (Hudson et al. ca. 1981:192; Wilke 1983; Elwood 1980:159-160).

One former river pig, John Huggins, wrote the following about his experiences on river drives in the Flathead:

Tent camps were used on the drives and an average day's work was 16 hours. We once drove 10,800 poles from [the] North Fork to Columbia Falls in 1924. They are harder to drive than short logs as the danger of a snag is increased. The longest drive I've ever been on [started] three miles above Nyack in 1916 (Huggins 1961).

A description of a 1916 river drive on the Middle Fork for the Somers Lumber Company mentioned that the men camped in a railroad boxcar while falling the trees. They started the log drive in May, using 32' bateaux with a boatman in each end and four 11' oars. The men in the boats kept the logs out of sloughs, off rocks, and away from the shore (see Figure 108). The drive from Nyack to Somers took 96 days. After the water went down, horses hauled any remaining logs back into the river (and some were gotten out with the high water of 1917) ("Tell" 1963:12).



Figure 108. Log drive on Middle Fork of the Flathead, showing bateau used by river pigs (courtesy of Henry Elwood).

Floating cookshacks on rafts, called "wannigans," followed the crews working on river drives and tied up at the bank for meals and at night (see Figure 109). The men were fed two lunches a day, plus breakfast and supper. Men would fill their plates on the raft and then sit on shore to eat. River pigs built fires at lunch so that they could dry out while the coffee was being made. Reportedly, most pots of coffee had a bit of snuff thrown in them (Hutchens 1968:131; Craney 1978; "Tell" 1963:12; Mercier 1989:71).



Figure 109. Wannigan on Stillwater River near the end of a log drive (Clifford M. Walter photo, courtesy of Henry Elwood).

Log jams were sometimes more than half a mile long in the Flathead area. Those on river drives were generally broken with dynamite. Some used a steam threshing machine engine with a cable and a stump-puller to free key logs. Most river pigs could "ride logs through rough water as easily as a squirrel could go up a tree" (Frohlicher 1986:33), but the job was quite dangerous (Craney 1978; Flathead County Superintendent 1956:22).

Hans Larson successfully ran a river drive on the North Fork in the 1920s during a flood crest, delivering ponderosa pine to Columbia Falls at a cost of \$0.25 per thousand board feet (Bolle 1959:47). An early 1920s silent movie called "Where the River Rises" even featured a log drive on the North Fork.

The last river drive on the Stillwater was in 1927, and the last in the Flathead area was in 1931. In 1950, the last river drive in the nation took place on the Clearwater River in Idaho (Mercier 1989:70; Shaw 1967:7, 123; "Corporate History" n.d. :5; Renk 1994).

Mechanization of Logging

The increasing costs and decreasing supply of skilled manual labor combined with the demand for more efficient harvesting methods led to the mechanization of many phases of logging. After World War I, the development of the tractor and truck, the improvement of power skidding devices, and the virtual disappearance of animals except horses used in short distance skidding and log hauls changed logging dramatically. In the 1930s the logging technology changed from steam to internal combustion engines. Truck logging and tractor skidding allowed the logging of steeper areas than horse logging and skidding. Bulldozers came into use to build logging roads

and to skid logs in the 1930s, greatly increasing the areas accessible for timber harvest. By 1940 the transition from horse logging and river driving to tractor skidding and truck hauling had occurred (Brown 1936:10; Bolle 1959:70; Hudson et al. ca. 1981:195; FNF "Timber Management, Swan" 1960:39).

Tractors and trucks replaced log chutes. The first tractor with full-length tracks appeared in 1911, and logging companies throughout the Northwest began using them instead of horses for skidding operations. World War I developed the tractor for reliable use. Trucks were first used experimentally for logging in 1913. By 1930 trucks were hauling 6% of the logs in the country. Trucks were used more frequently after 1932 because of the development of inexpensive, light, and powerful pneumatic-tired trucks and detached trailers. Contract ("gyppo") haulers would haul the logs from skidways, decks, or landings or directly from the woods to the destination at a flat price per thousand feet (Brown 1936:10, 135, 177, 181; Hudson et al. ca. 1981:195). The use of trucks allowed loggers to haul logs to the mills year-round, and they proved faster than railroads.

The earliest logging trucks in the Flathead Valley were used in the 1920s, but they were not common until about 1948. In 1924 truck logging began on a J. Neils sale of damaged timber north of Columbia Falls. Tie mills set up in the woods cut fir and larch railroad ties, which were then trucked to Columbia Falls. The company also cut white pine and spruce into logs, loaded them onto railroad cars in Columbia Falls, and shipped them to Libby. One of the earliest trucks used for logging in the Flathead was a 5-ton GMC that hauled lumber from Truman Creek to the Stoltz mill in Kila (see Figure 110). In the summer of 1923 a Flathead logger was hauling long poles in a surplus World War I army truck with a homemade trailer. J. Neils did its first hauling of long logs in 1933 on a sale in the Echo Lake area, and tractors were used to skid the logs. Despite these early examples, logging through the 1920s was done almost completely by horses in the Flathead, and logging trucks were not used to any great extent until World War II (Elwood 1980:160; P. Neils 1971:69; March 1981; Green 1971:III, 129; G. Neils 1976; Cusick 1986:21).



Figure 110. Willis March logging truck, 1920s (courtesy of Henry Elwood).

In 1956, logging in Region One was generally done by tractor skidding and hauling of logs to the road with winches and cables. Another less common method used mobile "jammers" that operated from a truck road. Jammer logging was usually supplemented by horse or small tractor skidding. Almost all the timber was skidded uphill (USDA FS "Watershed" 1956:51).

An important technological development was the gas-powered chainsaw. In 1937 the Flathead National Forest and others tested the Wolf Portable Timber Sawing Machine on fires. The unit weighed 85 pounds, much less than other models of power saws at that time. On the Flathead, it doubled the speed of a 25-man crew clearing a fire line through heavy windfalls, and it was used clearing trail between camp and fire line and on mop-up work. According to the Forest Service analysis, the new saw, improved by Region One, cost about 25 cents per cut versus about 61 cents per cut for a cross-cut saw gang (G. Duncan 1937:15).

Power saws came into common use in the area in approximately 1945. They allowed sawyers to make more money and reduced the number of men on a crew. During the construction of Hungry Horse Dam, sawyers used two-man chainsaws. One end weighed about 100 pounds; the other was so light the sawyer just had to balance it. By 1954, according to a *Spokesman Review* article, no one was using crosscut saws in the woods anymore (MacKenzie 1972:31-32; "Lumber Folks" 1954:69; 24FH466, FNF CR).

Logging Camps

One of the largest-volume logging contractors in the Flathead Valley was Henry Good, who often operated many separate logging camps at one time. Good became the main contractor for

the Somers Lumber Company in approximately 1909. He logged 20-30 million board feet annually, mostly 16'-long saw logs from his own land in the Stillwater delivered to the river bank. His main camp was at Olney on Dog Creek. Between 1929 and 1935, during the Depression, he still took large contracts but gyppoed them all out. Another logging contractor, George Slack, reported that in the 1910s he usually established camps of about 80 men each that would produce about 5-6 million board feet per camp (Schafer 1973:5; Elwood 1980:166-167; "Personal Experience Record of Captain George W. Slack," SC 126, MHS).

Workers at a logging camp were housed in anything from tents, log cabins, railroad boxcars, or frame buildings (see Figure 111). Many camps were portable and would be moved as needed. A typical logging camp in the Flathead included a bunkhouse, office and store, cookhouse, stable, root cellar, and a shack for the foreman, sawfiler, and timekeeper (see Figure 112). The buildings were generally low log structures. The bunkhouse would be lined with two-story bunks with straw mattresses (loggers provided their own bedrolls in the early years). A barrel stove was located in the middle of the room, and wires stretched across the room on which the men hung their wet socks, mittens, and so on. The stock at a lumber camp was very well cared for. As one observer put it, "Horses cost money - but you always could get lumberjacks" (Frohlicher 1986:29-30; Bryant 1913:60).

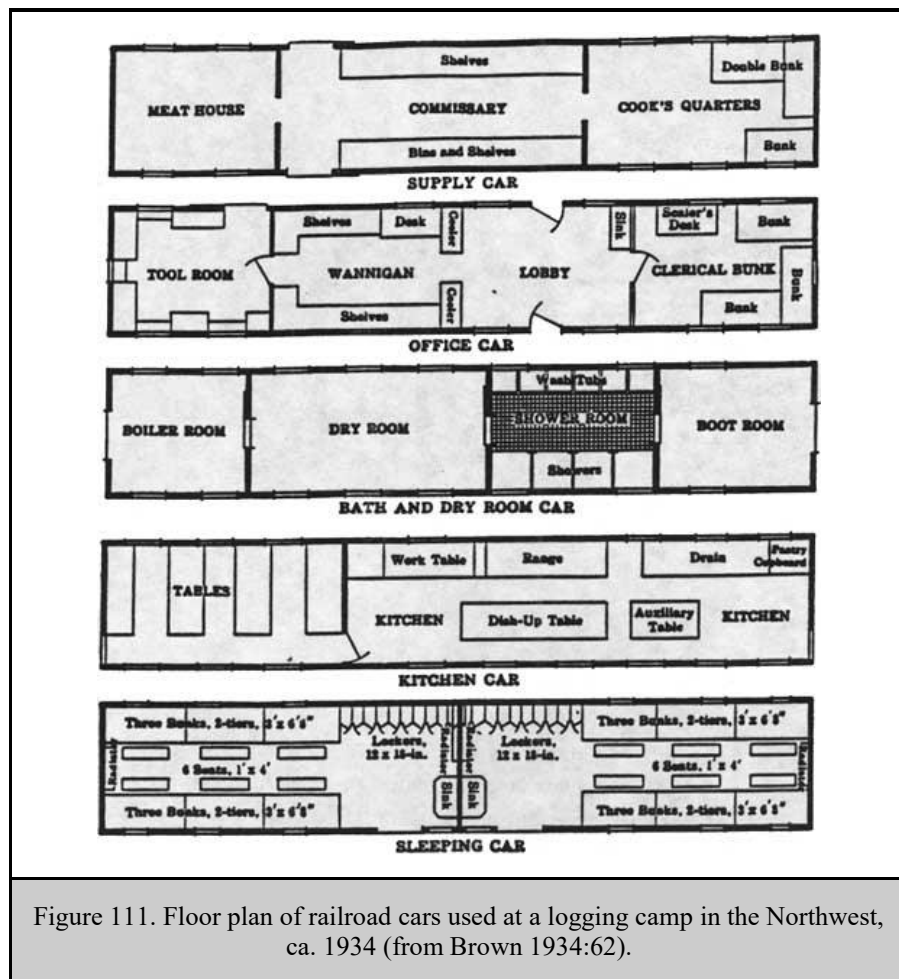


Figure 111. Floor plan of railroad cars used at a logging camp in the Northwest, ca. 1934 (from Brown 1934:62).



Figure 112. Logging camp known as camp 3, Fortine, Montana (photo courtesy of Henry Elwood).

Crews went to work long before daylight, traveling along paths in the deep snow. They earned \$30-75 a month plus board. The typical work-week was 10 hours a day, six days a week. The men usually played poker at night until lights out at 9 p.m. (10 p.m. on Saturday nights). Every camp had a chore boy who cleaned the buildings, cut firewood, built fixes, and carried water for the camp (Wilke 1983; Bryant 1913:68; Linrude 1981).

Many workers in logging camps were unmarried. In the Flathead, many of the early loggers were of Scandinavian, German or French-Canadian descent (and "foreigners" were often segregated from the "locals" in the bunkhouses). The loggers typically wore heavy wool shirts, a narrow-brimmed felt hat, long underwear, heavy wool pants cut off ("stagged") at the boot tops, and greased leather or rubber boots with caulks (spikes) in the soles (see Figure 113).



Figure 113. Loggers standing in front of load of logs (courtesy of Henry Elwood).

Many of the lumberjacks would stay in camp until the end of the season; others would go in to town after each payday. The lumberjacks wore their caulked boots in town; some stores had to replace their wooden floors every few years because of this (Frohlicher 1986:33; Suchy 1978:11; Montgomery 1982).

Many logging camp workers were footloose and migratory. Food was a critical item at a logging camp, and if a cook (often called the "belly robber") had a reputation for good cooking, workers would try to get jobs at his or her camp (see Figure 114). Logging camp cooks were generally men, although a few women cooked in Flathead camps. Cooks would generally get up at 4:30 a.m. to get the fire going and water heating for coffee. Breakfast featured bacon, sourdough hotcakes, eggs, hot cereal, and cornflakes. Some logging camps in the early years (before deer limits or hunting seasons) had a hunter who supplied the cook with venison. Many camps supplied fresh meat by keeping pigs to eat the garbage. At the Somers Lumber Company camp on Swan Lake, cattle were driven to the head of the lake from Flathead Valley, fattened, and then slaughtered. The company also raised potatoes and pigs and had a slaughter house. At a camp in the Trego area, there were pigs, beef cattle, and about 10 milk cows. According to logging camp rules, the men ate their meals in silence except to request the passing of food. If the work site was far from the camp, hot lunches were sometimes delivered to the workers by train, wagon, or sleigh to keep the men going during their 10-hour work day.



Figure 114. Interior of kitchen at the State Mill logging camp (courtesy of Henry Elwood).

Forester Bob Marshall studied 40 loggers in a northern Idaho camp. He determined that the average man ate breakfast in 10 minutes, lunch and supper in 12 minutes each (Mercier 1989:72-73; Saurey 1983; Simpson 1967:110; Craney 1978; Elwood 1980:164, 201; Suchy 1978:11; Marshall 1926: 15).

As soon as breakfast was finished the cook started preparing dinner, grinding his own sausage, baking bread, and making soap. With a crew of 15 men, a cook would have one flunkie. With between 80 and 100 men, there would be a head cook, a dishwasher, and two flunkies. In the early days few canned foods were used. The cooks relied on dried foods, beef, and pork products. All camps had root cellars to store their food, and meat houses. During Prohibition, moonshiners supplied some loggers with liquor (Elwood 1980:163-164; Montgomery 1982).

Logging camps were not known for their exemplary sanitary conditions. Garbage was usually dumped just outside the cookhouse door. Dry open toilets were located near the cookhouses, and in the early years there were no bath or laundry facilities (Elwood 1976:39-40; USDA FS "Early Days" 1976:199). One retail lumber yard owner commented, "It gagged me to eat at some camps, with flies on the food and in the coffee" (C. I. O'Neil, "Kalispell, Montana," 1947, MSUA). A Forest Service check scaler remembered that "the only time it was safe to go to the latrine was at mealtime, when all the flies were in the cook house" (Koch ca. 1940:82).

Some logging camp cooks prepared special foods for particular ethnic groups. For example, Mordy Johnson made pickled herring at an all-Scandinavian camp, and "they'd pin back their ears and they'd wade into that pickled herring and boiled potatoes...No use to put anything else on 'cause they didn't eat it" (Mercier 1989:73).

Elers Koch, long-time Forest Service employee, commented that:

years of work in the big timber do something to a man. The atmosphere in a logging camp is not a cheerful one. The lumberjack is rarely a light-hearted individual, but inclined to be silent if not morose, and the foremen take on pretty much the same characteristics as the men. One hears little of laughter or jokes in a logging camp. The men eat their enormous meals silently, and sit in the bunkhouses or outside them, tired from the heavy work (Koch ca. 1940:146-147).

There were still some logging camps in the Flathead in the 1930s. In 1936, however, it was reportedly "not uncommon" for lumberjacks to drive 15-20 miles to work and return home each night. During World War II, it proved cheaper to transport crews from their homes by bus than to maintain logging camps (Whitney 1983; McDonald 1936:6; Ibenthal 1952:16).

The IWW Strikes

The Industrial Workers of the World, also known as the Wobblies, was founded in 1905 in Chicago as a labor union that appealed to seasonal, low-paid workers. Its members and organizers preached working-class solidarity and class warfare. Their program was based on an anti-political Marxism, and in the Pacific Northwest they were most active among woodworkers and sawmill workers. In 1905 the newly formed International Brotherhood of Woodsmen and Sawmill Workers was granted jurisdiction over all loggers and sawmill workers. This union at its peak had only 1,200 members (most in western Montana), and in 1911 it was disbanded (Tyler 1967:4, 88).

The Wobblies early on organized free speech fights. They would converge on a town that did not allow street meetings and encourage their own arrest. Free speech fights in Missoula and elsewhere were also a good way to spread the word about the union to western workers. IWW organizers were active in Kalispell as early as 1906 among the loggers and millworkers.

Elizabeth Gurley Flynn, an American communist and an IWW agitator, came to Kalispell in 1909 during the lumber strike there. She reported the strike as successful, although she commented that the IWW organizer, Fred Heslewood, was embarrassed by an IWW music band wearing red uniforms that had set up camp in town "like gypsies." IWW union halls served as meeting places, social clubs, dormitories, mess halls, and mail drops. Kalispell and other towns in the Flathead had their own IWW halls (Tyler 1954:8; Dubofsky 1969: 174; Elwood 1980:161; Flynn 1955:101; Hudson et al. ca. 1981:200; Polk City Directories).

The Flathead Lumberman's Board of Trade organized in 1902 to prevent any attempt to organize sawmill workers or loggers. Some of the lumber mill owners and operators included in this group were the Smith Valley Lumber Company, State Lumber Company, Lake View Sawmills, B. J. Boorman Lumber Company, Flathead Valley Lumber Company, Enterprise Lumber Company, Northwestern Lumber Company, Kalispell Lumber Company, Athens Saw Mills, and the BM. The mill owners resolved not to recognize any labor union. At the same time, the Federal Labor Union No. 175 of Kalispell, with about 1100 members in the county in 1902, passed a resolution demanding \$2.50 per day, overtime and Sunday pay, and 9-hour days (Elwood 1980:60, 161).

Many of the woods and mill workers in the Kalispell area in the early 1900s were transients. Often they found work through private employment companies who split the fee for finding a job with the foremen or employers. The Somers Lumber Company reportedly hired 3,000 men one winter in order to maintain a crew of 50 men. According to a 1910 writer, "As soon as a man had worked long enough to pay the shark's fee, the hospital dollar, poll tax, and a few other grafts, he was discharged to make room for more slaves, so that the fleecing process could continue. The different fees are split, or cut up with the bosses" (Elwood 1976:39; Venn 1971:19).

The first strike at the Somers Lumber Company mill occurred in 1906, with leadership from the Allied Workers of America. The 1906 strike at Somers lasted five days, and the wages of common laborers were subsequently raised from \$2.00 to \$2.25 a day. In the fall of 1906, after this strike, an IWW organizer from Missoula organized the workers in Somers. By 1907 IWW membership at the Somers Lumber Company was 250 (20 men were listed as non-union). On February 11, 1907, strikers shut the plant down, citing grievances such as the "overbearing manner" of the plant superintendent and protesting the required trading at the company store. On April 1, 1907, a compromise was reached whereby the foreman resigned and the mill was made an open shop. As a result, a number of Flathead Valley sawmill operators increased their wages (Elwood 1976:39-41).

Perhaps as a result of the IWW strikes, in 1907 the woodworkers and Kalispell-area lumber manufacturers signed an agreement, one of the few at that time. The agreement, to last one year, gave the workers the right to unionize, with IWW workers to return to work at the wage scale recently adopted by the lumber manufacturers of western Montana. These wages ranged from \$45 (common laborers) to \$85 (cooks for more than 20 men) per month. A Forest Service employee in Kalispell commented to a Washington Office official, "Notice the high wages. Wouldn't they break the heart of a Maine lumberman?" (Item 7, Box 74590, RG 95, FRC).

The May 1909 strike that shut down the Somers Lumber Company mill was aimed at getting a 50 cent wage increase. This strike led to more bitterness and frustration among workers than the 1907 strike. Workers at the State Mill in Columbia Falls also struck for a short time, but the company soon banned IWW organizers from the plant. By the next month nearly all the Somers Lumber Company workers had returned to work, having won a 15% wage increase and other benefits such as lower rent and fuel costs. River pigs and log drivers stayed off the job in large numbers, however, and reportedly 15 million board feet of logs were left on the river banks that summer. Judge Erickson issued an injunction to send the men back to work, and this plus the threat of eviction from the company town of Somers caused the workers to return to their jobs (Elwood 1976:41-43; *Kalispell Bee*, 21 May 1909).

The IWW had difficulty reaching isolated lumber workers, so organizers went out on the job as camp delegates. Lumber mills, however, hired detectives and screened employees. The U. S. entry into World War I in the spring of 1917, however, aided the IWW cause because the labor market became suddenly tighter (Dubofsky 1969:334-335, 346).

In the spring and summer of 1917, IWW workers organized strikes in the wheat fields, the forests, and the copper mines, all industries essential to the war effort. IWW crews in the Northwest began striking intermittently in April of 1917 for an 8-hour day and higher wages. In

July the IWW declared an industry-wide walkout, emphasizing passive resistance. This large strike partially paralyzed the lumber industry. That same month, lumber employers established the Lumbermen's Protective Association. The lumber men proclaimed that the strikes were caused by foreigners, pro-Germans, and thugs, and they refused to grant the 8-hour day. When the strike occurred, the nation needed lumber for army cantonments, railroad freight cars, and cargo ships, but the mills were operating at only 60-65% capacity. The lumber industry created a new organization, the Loyal Legion of Loggers and Lumbermen, pledged to support the United States in wartime (Dubofsky 1969:359, 362-63, 365; Hudson et al. ca. 1981:202).

In fact, the 1917 strikes in the lumber industry resulted from factors such as low wages, long days, no baths, plentiful bed bugs, and no clothes-drying facilities. The lumber industry in western Montana, always highly unstable, had just been through a four-year depression (between 1913 and 1915 the mills in the northwest were generally operating at less than half their capacity). About 150 small mills in Montana worked on contract with the ACM and the NPRR, and they paid relatively poorly for long hours. There was a high rate of labor turnover, reflecting discontent (Hudson et al. ca. 1981:202; Toole 1972:157, 160; Rader 1967:192).

The northwest lumber strike began in the Flathead National Forest area, in Eureka, just a few days after World War I was declared and just when the ice had broken on the rivers. About 100 men began the wildcat strike against the Eureka Lumber Company. In response, the Secretary of War ordered federal troops to Eureka to protect properties and the railroad. Troops were used as strikebreakers in Whitefish, Libby, and Columbia Falls. This represented the first use of federal troops in a labor dispute after the nation's declaration of war, creating a precedent for the use of troops to intimidate workers striking for a variety of trade union goals. The Eureka strike quickly ended, but its failure ignited a general lumber strike throughout the Inland Empire. The strike spread in the summer of 1917 to Washington, Idaho, and Oregon sawmill and woods workers. Of the 70,000 men working in the lumber industry, 50,000 were idle because of the strike; approximately 20,000 took an active part in the strike. The main force of the 1917 strikers were migrant workers, who were generally single, did not vote, and were often recent immigrants (Gutfeld 1979:34-35; Toole 1972:164; Rader 1967:193, 195, 197-198).

Federal troops raided the IWW hall in Whitefish and held Wobblies in the city jail for several weeks without charges. In Columbia Falls, troops forced IWW members to work on city streets, without charges being placed against them. The Kalispell City Council passed a sweeping sedition ordinance that made it illegal to advocate or incite disrespect for any law or city ordinance. Citizens' committees even drove IWW members from the area (Rader 1967:205).

In May of 1917 Region One Forester F. A. Silcox wrote the Forest Service Chief in Washington:

I am reliably informed that 90 to 95% of the lumberjacks in this region now belong to the I. W. W. organization. It is my personal opinion that there is a considerable amount of social justice in some of their demands. As in all movements of this kind there are extremists and ultra-radicals. There has been a decided tendency on the part of the lumbermen to judge the whole movement from the action of the radicals.

Silcox reported that the lumbermen were urging the Forest Service to help them suppress the "menace" of the IWW by not hiring any firefighters who belonged to the IWW. Silcox declined from taking such an action and commented that he saw it as a labor problem in which the Forest Service should not be involved (Silcox to the Forester, 10 May 1917, 1380 Reports - Historical - District 1, RO).

Silcox commented that the causes of the 1917 strikes were partly due to the conditions of the logging camps, which he described as "dirty, badly drained, poorly ventilated, crowded, unsanitary and generally vermin-ridden, with no facilities for bathing or for washing clothes, combined with long hours, comparative low pay, and an atmosphere of distrust and suspicion." He commented that the men were treated less well than work horses, "for usually there was more ventilation in the barns than in the bunk house." He called upon employers to deal with the workers' legitimate grievances. Other foresters in western Montana filed similar reports. Silcox later became Chief of the Forest Service, even though he had been accused of being a Wobbly himself (Gutfeld 1979:36; Koch ca. 1940:82).

The hysteria of the war led vigilantes, local governments, and the federal government to step in and interfere with the lumber strike of 1917. The strike stimulated intolerance in the state, represented by criminal sedition and syndicalism measures enacted by the state legislature. The public considered Wobblies pro-German sympathizers, and many were arrested and imprisoned. IWW organizer Frank Little was lynched in Butte as part of this general hysteria. The 1917 strikes were broken by the fall in Montana by a combination of the presence of federal troops, federal and state prosecutions, the patriotic mania infecting many Montanans, a newspaper campaign, and the isolation of the lumber workers (Tyler 1954:25, 27, 85; Gutfeld 1979:36; Rader 1967:206-07).

After the 1917 strike had formally ended, IWW members continued striking "on the job," using slow-downs and other methods to hinder production. In 1918, the government established the 8-hour day for Montana lumber workers, uniform wages for the industry, provision of bedding and regular changes of linen, and so on. The public tended to credit the industry-sponsored Loyal Legion with the reforms, however (Tyler 1967: 101, 107; Hudson et al. ca. 1981:202).

Montana lumbermen attracted men back to work by improving camp conditions, such as installing bathing facilities, steel bunks and springs, providing standardized menus and reading facilities, and so on. In 1923, however, practically every logging camp in the Flathead again went on strike. The strike began against the Somers Lumber Company and the Henry Good camps but soon spread (Rader 1967:206; McKay 1993:38).

For the Forest Service, the striking lumberjacks provided a large labor pool available for fighting fires in the bad fire years of the late 1910s. Elers Koch described the strength of their influence in fire camps in 1919 as follows: "Along the fire lines the fresh cut log ends were decorated with a big I. W. W. or a crude picture of a black cat sitting on the axe handle. Men were forced to take out a red card or get out of camp" (Koch ca. 1940:82). According to Silcox, the 1917 fire crews, most of them strikers, were the best the Forest Service had ever had. Silcox reportedly persuaded workers at IWW headquarters that it was in their interest to fight fires on public lands (Rader 1967:203; Baker et al. 1993:112).

Dissatisfaction was high among woods and sawmill workers in 1919 because there was not much work available in the lumber industry. Many men hired had worked for higher wages during the war, and they continued to feel that "their services were almost invaluable." Concerning IWW members, one writer mentioned that "a considerable and influential minority had and have no intention of giving value received for the wages paid." In some cases fire patrolmen "slowed down" on the job, letting the fire creep across the line. Men also would hire on to fight fire in order to get free transportation to some point along the railroad route and then would disappear (5100 Fire Management, 1919 Fire Season - General, RO:8-12).

Multiple Use-Sustained Yield Act of 1960

In the 1950s the administration of the national forests changed from custodial to intensive management. The volume of recreation on the national forests tripled, timber sales climbed from 4 to 9 billion board feet, and so on. After decades of Forest Service propaganda talking about timber famine and devastation in order to justify federal regulation of logging, now the Forest Service was logging on a large scale (Clawson 1983:32, 38; Steen 1976:302).

The Forest Service acknowledged other responsibilities besides timber when it was established in 1905, as had its predecessor, the GLO. These non-timber resources included watershed, recreation, grazing, and mining. Multiple use developed out of legislative intent to broaden the mandate of the Forest Service and from a need to broaden public support for forestry. Most foresters, however, concentrated on increasing timber supplies, rather than on multiple use (Clary 1986:40).

In the 1950s the Forest Service defined the allowable cut as the upper limit of logging permitted during short periods. The sustained yield, on the other hand, set quotas over longer time spans. Sustained-yield units were based on economic and social factors. Conservationists viewed the post-war increase in logging as a shift to the poor land management practices that the Forest Service had been denouncing over the years in the name of impending timber famine (Steen 1976:285).

The Forest Service definition of sustained yield did not take into account the price of land, the value of the location, or other factors affecting the price of wood from year to year. It emphasized supply rather than demand, and efficient growth of wood rather than efficient use and service. Analysis in terms of multiple use, on the other hand, required analysis in terms of values, costs, and benefits (Olson 1971:189-190, 192, 198).

Before World War II, management of the national forests had revolved around allocating benefits. During the post-war boom, however, the agency had to assess and balance competing interests in a finite amount of land. The Forest Service wrote and lobbied for the passage of the Multiple Use-Sustained Yield Act of 1960, which reflected the transitions taking place in the postwar years. The act reflected the intention to manage the national forests for a variety of uses, including outdoor recreation, range, timber, watershed, and wildlife (Cox 1985:240; Dana 1980:201).

The Forest Service defined multiple use as managed forests under sustained yield on the basis of multiple use. The term multiple use had been used by the Forest Service since its creation in 1905, but it became in vogue in the 1950s. Every acre did not have to sustain every use, and watershed protection ordinarily had first priority. The 1950s set the stage for the Multiple Use-Sustained Yield Act passed on June 12, 1960. District rangers were required to weigh the various pressures on the Forests' resources and allocate the resources such as timber, water, range, recreation, and wildlife in a consciously balanced manner, consistent with the public interest (Steen 1976:278, 301).

The act gave the Forest Service legislative authority to provide recreation facilities on the national forests. The act did not, however, provide clear guidelines for establishing priorities among resources. It only stated that it was not necessary to produce every good or service on every acre, and that economic yield was not to be the sole criterion for evaluating competing uses (Dana 1980:204).

During the 1950s public opinion began a shift away from conservation and use toward preservation, and the Forest Service, previously supported by conservationists, "began to lose some of its luster" (Steen 1976:277). In the 1950s, recalled retired Forest Service employee Bud Moore, "the public was really interested in their national forests but they had such trust in the Forest Service that they just almost worshipped it. They'd say, 'We know that you know what you're doing.' The big thing that changed this was the Forest Service pushing commercial timber at the expense of a lot of other things" (Moore 1989).

FOREST HOMESTEADS

Introduction

One of the principal reasons for opposition to the creation of forest reserves was the inclusion of agricultural lands within forest boundaries (Kerlee 1962:6). The "closing of the frontier," announced in 1892, led settlers to look for unoccupied land in areas such as deserts, cancelled railroad grants, Indian reservations, state and school grants, reclamation projects, and agricultural lands inside the national forests. The Forest Homestead Act of 1906 was passed in order to make this agricultural land available for settlement.

The original Homestead Act of 1862 allowed a settler 160 western acres free if he or she lived on it for at least five years, cultivated a certain number of acres, paid a small filing fee, and built improvements on it. The law allowed the settler to commute his entry and purchase the land at \$1.25 an acre (in 1891 Congress changed the minimum period before commutation from 6 to 14 months) (Dunham 1970:6, 155).

Land for homesteads had to be surveyed first by the General Land Office (GLO). Once the land had officially been surveyed, "squatters" had the first right to file a claim on the land they occupied. The Flathead guide meridian was run by the GLO in 1892. Almost all squatters filed a declaration of occupancy, and in the summer of 1893 a complete survey was made. The settlers then could file on the claims if they had located before March 3, 1891, when the pre-emption law was repealed. Most proved up in the fall of 1893 for \$1.25 an acre, with an additional cost of about \$50.00 (Robbin 1985:19; Schafer 1973:10).

The Forest Homestead Act of 1906 allowed U. S. citizens to file for homesteads within national forest borders. This law resulted in some settlement in the Flathead and Blackfoot National Forests, but many of the homesteads eventually reverted back to the Forest Service. Administering the provisions of the act took much of the forest ranger's time in the early 1900s.

Forest homesteads are represented on the ground by homesteaders' cabins, barns, outhouses, etc., some in good condition and still in use by private owners (mostly for recreation) and others standing only a few logs high.

Forest Homestead Act of 1906

The Forest Homestead Act of June 11, 1906, allowed people to settle on land primarily suited for agriculture located within the national forests. The act was intended to quiet the protests of those unhappy with the inclusion of non-forest lands within the forest reserves and also to attract "a superior type of homesteader" to the Forest who would help protect its resources. Many settlers within the Forests had not yet filed homestead claims because the areas had not been surveyed by the GLO, so they had no way to secure title. They received preference in establishing a claim, if they had not located on land containing valuable timber or mineral resources. The government was required to survey and list for settlement all agricultural lands within the national forests. Once surveyed and approved, these "June 11th claims" could be homesteaded. The claimant had

to pay a per-acre filing fee, occupy the claim for several years, cultivate the land, construct a house and outbuildings, and within five years file the required proof of residence and cultivation. As with non-forest homesteads, settlers could sell their land once they had "proved up" on their claim (Hudson et al. ca. 1981:216-217; Gates 1968:512; Kerlee 1962:115, 158).

This act significantly lessened the opposition to the forest reserves. As a 1910 *Daily Inter Lake* editorial commented, the "almost universal opinion" about forest reserves in the Flathead in 1897 was that they would retard the development of the country. The inclusion of good agricultural and fruit land was especially objectionable, but since then the Forest Service was "constantly becoming more liberal in its dealings with prospective settlers." Local people felt land should be classified according to its soil, not the standing timber, and believed that "a family engaged in raising foodstuffs contributes more to the general good, than would come from the tract of timber in its natural state." The opposition to the forest reserves themselves, the article continued, "has largely disappeared" (*Daily Inter Lake* 1910:3).

Until 1905, the owners of patented land inside forest reserves could exchange their land for land outside the reserves. The chief beneficiaries of this lieu-land provision were the railroads and the states, however, not individual homesteaders as had been intended (Peffer 1951:47).

The Three-Year Homestead Act was passed in 1912 to encourage claimants to complete their residency requirements on forest homesteads rather than commuting their claim and moving off. The act reduced the residency requirements; claimants could obtain patent if they lived on their claim at least 7 months a year and met the minimum cultivation requirements (Hudson et al. ca. 1981:218; Dana 1980:22).

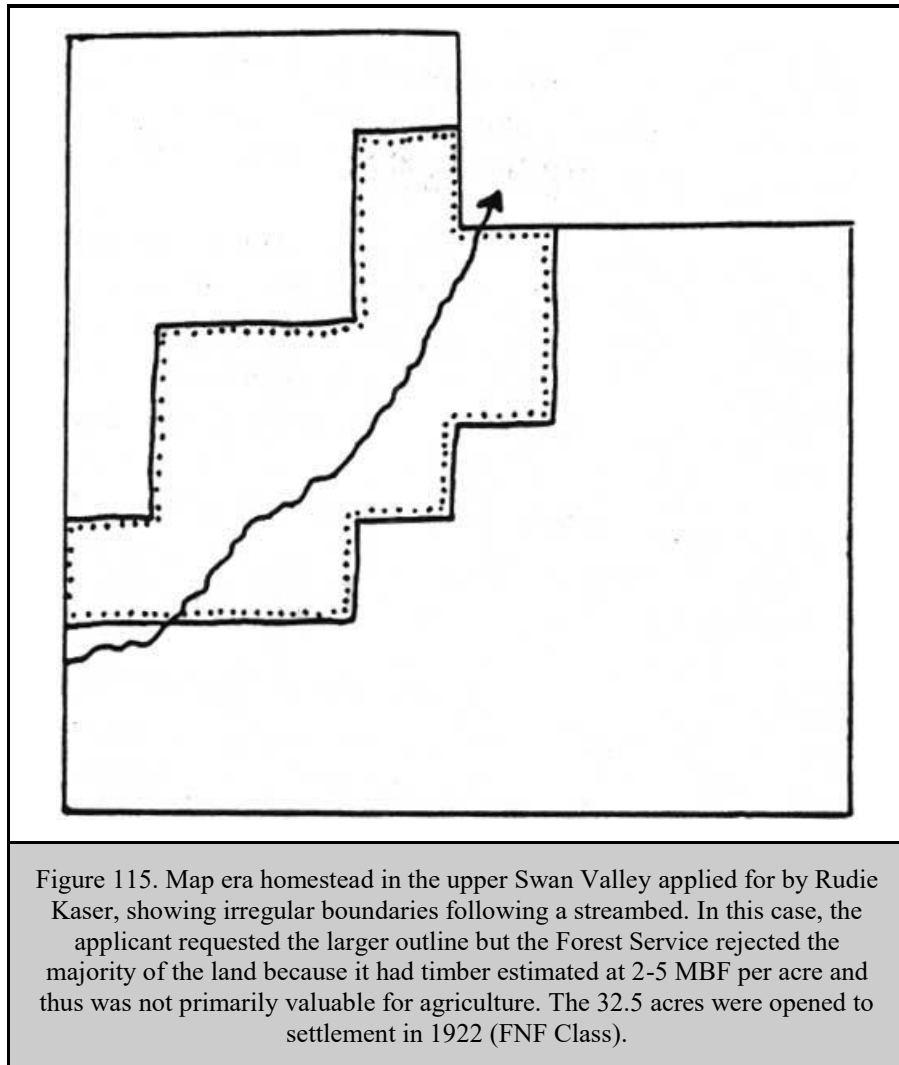
Beginning in 1912, in an effort to systematize the approach to evaluating potential forest homesteads, the Forest Service was required to open all lands classified as agricultural to settlement. This resulted in the opening of many small tracts that otherwise would have been retained by the Forests. These later homesteads were generally smaller (the national average was 70 acres), of poorer quality, and more isolated than the earlier ones. One example of this was an 11.58-acre homestead on Swan Lake that today would be a summer home site (Kerlee 1962:75-77).

The Forest Service soon realized that it needed to make its own withdrawals in order to keep suitable sites available for administrative and other needs. Rangers recommended and surveyed these withdrawals (which on many national forests covered more than were ever used). By 1912, the Forest Service had established one ranger station for each 60,000 acres of Forest. The government also withdrew sites for recreation areas, sawmills, log banking, water power sites, rights of way, etc. (Kerlee 1962:52, 56).

Some Forest Service officers were occasionally overzealous in rejecting homestead applications. If rejected, the claimant had to pay for a hearing. Much land judged agricultural by would-be settlers was rejected as such by the Forest Service; the rangers were trying to ensure "prosperous homes." Another reason the Forest Service may have been slow in granting homestead claims was that no extra funds were appropriated to administer the Act. Much potential homestead land

had not yet been officially surveyed and classified (Cameron 1928:282; Pepper 1951:65; FNF Class; Kerlee 1962:51, 54).

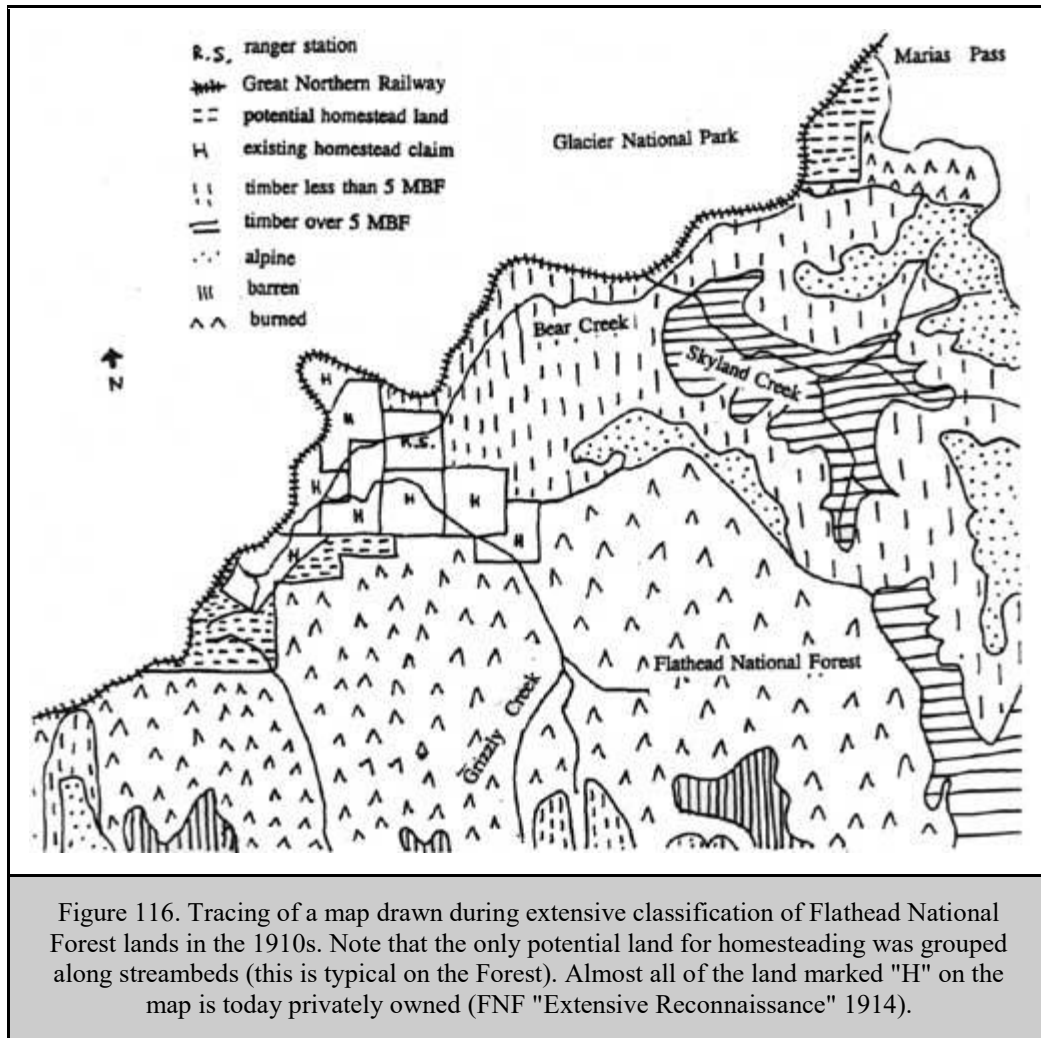
By 1917 the Flathead and Blackfoot National Forests had conducted extensive land classifications to define the areas that were chiefly valuable for agriculture. The potentially agricultural lands were then intensively classified, and appropriate lands were listed for opening to settlement. On the Flathead National Forest, most of the agricultural land was confined to stream terraces and gently sloping glacier upland. Some land initially rejected was later reexamined and listed, but many requests were turned down. Rangers frequently denied such requests on the Flathead and Blackfoot National Forests because the applicant had selected land that the Forest Service considered chiefly valuable for timber, although it was not yet marketable due to access problems. Rather than defer action on a request for years, while waiting for the timber to be harvested, the Forest decided to reject such requests (see Figure 115) (M. H. Wolff 1925:67, 99; FNF Class).



Applicants accompanied examiners whenever possible. The report on a proposed homestead addressed markets, transportation, topography, soil cover, and economic possibilities. The homestead boundaries were typically quite irregular in shape because the survey lines followed the contour of the mountains and took in natural clearings, springs, and creeks and avoided timber as much as possible. Most were surveyed by metes and bounds based on a common corner. By the end of 1924, approximately 465,000 acres in Montana and northern Idaho national forests had been listed for settlement (Kerlee 1962:77-78; M. H. Wolff 1925:110).

The isolation of forest homesteads was a barrier to social and economic activity. Many homesteaders raised cattle and horses that could be driven to market in good weather. Many if not most men worked in the logging industry, for the Great Northern Railway or for the Forest Service (or the National Park Service in the Middle and North Forks). Working for the Forest Service was considered partial fulfillment of the residency requirements even though the person might be absent, and the employment was at a busy time of year for a farmer. Homesteaders were required to report trespass of any kind on the reserves (grazing, timber cutting, and so on). Typical crops raised included hay, oats, and other grains for stock feed, plus vegetables for home use, fruit, and berries (Kerlee 1962:80-83). Typical outbuildings on a forest homestead included a log barn, an outhouse, a chicken house, sheds, and corrals.

From 1906 until 1912, approximately 60% of forest homestead applications were disallowed or voluntarily withdrawn. Government officials never believed that much of the land in the Flathead and Blackfoot National Forests was truly agricultural (see Figure 116). The first inspector sent through the newly created Lewis and Clarke Forest Reserve in 1899 stated clearly that the reserve had no "strictly agricultural land" except for some in the Birch Creek area (on the east side of the Divide). He continued, "In each of the main valleys some vegetables and hay could be grown, but the product could not compete successfully with that produced under more favorable conditions." He mentioned several favorable locations for small ranches but noted that they were isolated (Kerlee 1962:55; Ayres "Lewis & Clarke" 1900:3940).



The Forest Service could protest the issuance of a patent if the amount of land cultivated did not meet the requirements. Many homesteaders filed for a reduction of these requirements, and some were granted. In 1917 Frank Fisher of the North Fork applied for a reduction, stating:

I have worked with a desperation the last three years to accomplish these results but with little progress more than to open up the claim and establish a place to live. I have built a road of 3-1/2 or 4 miles cutting it through the thick timber... [but] without means and [with] the necessity of earning my living as I go along as well as improve my claim, my progress must of necessity be slow and unless I can get relief will surely fail in meeting the requirements of the law though I may exhaust my life in my efforts (FNF Adj)

The Blackfeet National Forest rejected Fisher's request, saying that he had "not been very diligent in clearing and cultivating the land." In 1918 the GLO overturned this decision, both because Fisher had built a long road and because he was so poor (FNF Adj).

The Forest Service rejected another claim because the applicant, Thomas Arneson, did not meet the residency requirement; the family lived in Missoula 9 months of the year so their children

could attend school there. The case was heard before the register of the U. S. Land Office in Kalispell, and in 1923 the applicant was issued final proof (FNF Adj).

In 1912 Henry Graves defended the Forest Service policy on homesteads in a *Saturday Evening Post* article. In explaining the reasons for refusing to open for entry all lands requested by claimants, he talked about the Swan Valley as a case in point:

The Swan River Valley contains upward of 30,000 acres of amble lands bearing a virgin forest of yellow pine of 15,000 to 40,000 board feet to the acre. Its value under present conditions is \$2.50 a thousand, averaging \$50 per acre. The timber on an average claim would be worth \$80,000 (quoted in Kerlee 1962:68).

In 1913, the Regional Office reported that "the general sentiment around the Flathead Forest is not as a whole very favorable. There has been a general feeling that there has been considerably too much delay on the part of the Forest Service in opening up agricultural lands in the Swan River Valley estimated to be approximately 34,000 acres, and the South Fork of the Flathead, estimated to be approximately 82,000 acres, to entry" ("Public Sentiment in District 1," 18 November 1913, 1380 Reports - Historical, RO:26). (The delay in the Swan was due to waiting for the GLO survey of the area to be completed.)

On the Blackfeet National Forest in 1913, opposition to the Forest Service focussed on the issue of agricultural land that was to be opened to entry as soon as the timber was removed. Some timber owners who were "genuine speculators trying to pose as persecuted homesteaders," according to a Forest Service report, wanted the Forest Service to keep its stumpage prices high (Historical, RO:19).

Some homesteaders took their appeals of Forest Service decisions directly to politicians. James Wiltse Walker, for example, a successful Kalispell businessman, supported a proposed bill reducing the requirements for proving up on a forest homestead. He appealed to Secretary Lane, who had defeated this bill, and Lane sent a personal representative to visit Walker's homestead. The representative was reportedly "amazed" at the amount of clearing that had to be done and told Walker he had done enough work for his patent (FNF Class).

Some cases brought out a great deal of personal information. Ora Rainwater of Spokane filed for proof of claim on a homestead on the Flathead National Forest and was rejected. The forest ranger reported that he had heard Rainwater was married and said, "I have seen several strange women going to and coming from his place. It got to be so notorious one time that I dubbed the place 'The Happy Hollow Harem.'" Nevertheless, Rainwater was issued patent on his claim just a mile southeast of Belton in 1922 (FNF Adj).

The greatest abandonment of patented and unpatented homesteads on the national level happened between 1912 and 1930. Many lands that were filed on were too small to succeed as farms or ranches. In the Blackfeet National Forest, 198 homesteads had been listed and entered on by 1930. In 1930, 121 (60.6%) of these were abandoned or not in use. According to the rangers in the area, the reasons were as follows:

- 5 too far from market
- 50 greater economic advantages elsewhere
- 58 poor soil
- 5 sold to adjoining ranches
- 2 disappearance of local markets
- 1 old age

On the Flathead National Forest, only 148 of 267 claims were still in the hands of the original claimants or their heirs in 1930. In 1930, 94 of the 267 claims were unoccupied or not being farmed. Of the 119 on the Forest that were not under their original ownership, rangers gave the following explanations:

- 48 sold after patented
- 6 muskrat farmers
- 7 bought for hotels, resorts, or summer homes
- 4 cancelled after entry, found to be on NPRR land, settler refused re-entry
- 3 reverted to county for taxes
- 5 leased to tenant farmers but not by original patentee
- 1 occupied by logger
- 4 owned by bank or loan company
- 26 entered, abandoned, succeeding entrymen
- 2 occupied by laborers
- 1 reverted, rented by Forest for fox farm (Kerlee 1962:92-93)

As described above, many of the forest homesteads filed on in the Flathead Valley were submarginal, and the residents sooner or later drifted away (see Figure 117). In the 1930s, following the drought in eastern Montana and the Dakotas, many of the old homesteads "were again occupied by people who were delighted to see something green." Between 1929 and 1941, about 500 farm families moved into the Flathead Valley from east of the mountains. In a program that lasted from the 1930s until 1952, many homesteads and tax-delinquent properties were consolidated into the national forests. Other homesteads were again abandoned during World War II. The Flathead National Forest estimated that by 1962, 50% of its homesteads had been returned to the Forest (see Figure 118) (FNF "Timber Management, Kalispell" 1960:48; Kerlee 1962:94-95; Skeels 1941:4-5).



Figure 117. Homestead of Ralph and Esther Day in the North Fork. Among the challenges faced by homesteaders in the Flathead National Forest were long, severe winters (courtesy of Flathead National Forest, Kalispell).

Year	Alienated Land (Acres)	Total Flathead National Forest Land (Acres)	Percent of Total that is Alienated
1924	484,723	3,043,171	15.9%
1939	394,997	2,600,000	15.1%
1985	278,740	2,628,674	10.67%

Figure 118. Chart showing the declining percentage of alienated land within the boundaries of the Flathead National Forest (the alienated land represents homesteads, railroad land grants, State land, etc.). The 1924 figure includes the Blackfoot National Forest (USDA FS "National Forest Areas" 1962; FNF "Informational Report" 1939; FNF "Forest Plan" 1985:III-38).

The classification of the lands in the Forest was difficult; sometimes it was even difficult to find the claim based on the applicant's description. Local rangers tended to give adverse reports on the classification of particular tracts, only to have their decision reversed by the regional officials. But the large number of abandoned homesteads may show that many of these lands really were unsuited for agriculture, and that many homesteads were taken up as speculation.

Regional officers were more lenient in granting homesteads than local officers, perhaps because they wanted to foster good public relations, because they believed the local officers were not competent in their decisions, or because they found it politically expedient to release the tracts (Kerlee 1962:103-04).

In the 1930s the Forest Service ordered rangers to burn abandoned cabins and outbuildings on the homesteads that had reverted to the Forests in order to restore the Forests to their natural settings (Kerlee 1962:83). In fact, many of the homestead lands now have greater value for recreation than for agriculture or timber.

Stillwater Area Homesteads

Early settlements in the Stillwater area concentrated along the Fort Steele-Kalispell road (also known as the Tobacco Plains Road or Trail). Along this road within the forest reserve in 1899, forest inspector Ayres found five occupied houses, four with gardens and fields. David Stryker had about 80 acres under cultivation. Some of these ranchers supplemented their farm income by boarding travelers (Ayres "Flathead" 1900:254).

A 1924 Forest Service inspection report claimed that the homesteads along Good Creek were "an economic blunder" that should never have been listed for agricultural use. The inspector continued, "Grazing cattle, venison, moonshine, and possible summer work with the Forest Service or on the County road constitute the only evident immediate resources of Good Creek. There is little doubt that the settlers have made some use of all of these resources, although there are but few cattle in the locality." At least one Good Creek homesteader found a creative way to make a living; he did the laundry for the logging camps in the area. As if to verify the above comment about moonshining as a source of income, long-time Stillwater State Forest employee Maurice Cusick commented, "When the bootlegging days were on, that Olney was a regular depot!" (7 February 1924, Flathead 1920-23 Inspection Reports, RG 95, FRC: Cusick 1986:31: Cusick 1981).

Some homesteaders were colorful characters who claimed to have exciting pasts. According to one account, the Gergen brothers, who homesteaded up Good Creek, appeared to fear for their lives. They wore guns strapped to their waists and walked 20-30' apart. By another account, however, the Gergens were simply farmers from North Dakota who wintered in Olney and ran cattle on their homestead in the summers, returning to their home in North Dakota in the 1930s ("Tally Lake RD List of Names," TLRD; Cusick 1986:31).

Other homesteaders lived in self-imposed exile. Two bachelors who lived separately on Qettiker Creek, Albert Jones and Charles Oettiker, were each university graduates and "meticulous housekeepers." Jones had reportedly been released from a government job for gambling, and Oettiker had left Austria to escape military service. Both trapped for the money they needed and lived on their garden produce, game, and fish (Hutchens 1968:65-66).

Some homesteaders were well-to-do professionals who either wanted a second home or simply liked living in the woods. An example of this is provided by Alba Tobie and Frances Jurgens Kleinschmidt, who had adjacent claims in the Tally Lake area and soon were married. Tobie was

an assistant cashier at Conrad National Bank in Kalispell, and after he and Kleinschmidt were married in 1910, he visited the claim every Saturday night while she lived there continuously. In 1912, according to a Blackfeet National Forest employee, their furnishings were those "found only in a modern home" and included carpets, bedding, fixtures, porcelain bath tub, wood shed, tools, gasoline engine, a "patent wood saw," and 200 jars of fruit and jellies. There was also a spring house, fences, and a one-acre garden. The Tobies "are people who would rather live in the country than in town, not because of any financial difficulties, but because they like the claim" (FNF Adj).

Claim jumpers appeared in the Flathead Valley as elsewhere. One documented case was on a Stillwater River homestead claim of Kalispell businessman McClellan Wininger. He found several men building a house on his homestead. Following a fight that resulted in gun and ax wounds, the defendant (Wininger) was acquitted (Johns 1943:IX, 23).

Schools were established in the more remote valleys to serve the children of forest homesteaders. For example, a school was built at Tally Lake in 1910. A school at Patrick Creek in the early 1920s had 10-12 students (*Kalispell Bee*, 11 October 1910:3; Cusick 1981).

North Fork Homesteads

After the initial coal mining boom in the early 1890s, settlement in the North Fork was abandoned for a time. Some of the miners cleared homesteads on the Home Ranch Bottoms to raise cattle, but the poor range and severe winters drove them out of the North Fork. One who did live in the North Fork in the late 1890s was Aaron Long, who worked as a packer in 1901 for geologist Bailey Willis. Willis said Long had lived five years on Logging Lake, that he had a dugout canoe made from a cottonwood log, and was "almost the last of the race of woodsmen, trappers, and hunters, whose occupation is nearly gone in this region" (FNF "Timber Management, Glacier View" 1949:40; Willis 1938).

In 1899 H. B. Ayres noted about 30 unoccupied cabins in the North Fork Valley, many in "tumble-down condition," plus two occupied cabins at Bowman Creek and at the Coal Banks. He felt that the North Fork could support agriculture, but only if there were a road and if the reserve were protected from fire, for it "would furnish good locations for forest rangers who by some farming on such lands could occupy their time when not employed on the reserve" (Ayres "Flathead" 1900:253-254, 284).

Homesteaders in the North Fork were attracted by the timber, wildlife, hopes of coal, oil, and railroad development, and natural meadows. The first permanent settlement was in Sullivan Meadow on the east side of the river, about a day's trip north of Belton by wagon. Early settlement concentrated on the east side of the river because the road was located there (at that time, both sides of the river were part of the Blackfeet National Forest). By 1910, only 14 homestead claims had been filed on the west side, whereas 44 had been filed on the east side. Following the designation of Glacier National Park in May of 1910, however, the concentration of settlement abruptly shifted to the west side of the river, and about 100 more homestead claims were taken up on that side in following years (Bick 1986:1, 3-4).

In 1908 Charlie Wise, Chaunce Beebe, and Fletcher Stein established the first three homesteads on the west side of the North Fork. According to Eva Beebe, wife of Chaunce, "They homesteaded because it was a hunter's and trapper's paradise. And they felt they were in heaven there. No rangers...nobody to bother them, you know. They made their own laws. That's what they wanted" (Beebe 1975).

Construction on the west side road began in 1912, and in 1914 Bill Adair moved his business out of Sullivan Meadow on the east side of the river, where he had built a store in 1904 and opened a hotel in 1907, to the west side of the river near Hay Creek. The store is now known as the Polebridge Mercantile (see Figure 119). Adair built a log house in 1912 on his homestead claim near Hay Creek (this is currently the Northern Lights Saloon next to the Polebridge Mercantile). Improvements by May 1917 included a house, log barn, log chicken house, and the mercantile, plus a well and fence and 20 acres of crops (Bick 1986:14; FNF Adj).



Figure 119. Bill and Emma Adair standing in front of their cabin next to the Polebridge Mercantile, ca. 1940 (the cabin is now the Northern Lights Saloon) (courtesy of Glacier National Park, West Glacier).

A 1917 Forest Service examination of the homesteads on the upper west side of the North Fork concluded that the land was best suited to forage crops in conjunction with livestock raising because of the severity of the climate. Most of the homesteaders by then were devoting most of their time to outside work and had only a few acres prepared for cultivation (Lewis 1917:14-15).

By 1910 there were 30 year-round residences on the upper west side of the North Fork. More than 40 properties were proved up and became private inholdings within Glacier National Park after it was created in 1910. By 1922, more than 150 homesteads were located in the valley, and

there were twice as many families as single men. In 1920 homesteader Ben Hensen opened a store, gas station, and new post office near Adair's store. He gave the post office the name Polebridge after a nearby bridge, and the community in that area has been called Polebridge since (Burnell 1980:2; Bick 1986:1; Walter 1985:11; "New Store" 1920:1).

Besides the bridge near the mercantiles, settlers built two "flying dutchmen," or hand-pulled cable cars, to cross the North Fork, and there was a bridge just north of the Canadian border until the flood of 1964. Other amenities included a phone system; most of the settlers were connected to one of the single-strand phone lines put in by the Forest Service or the National Park Service. A weekly stage served the North Fork, plus several post offices (three at one time in 1922). Settlers could send in their orders on credit to Adair's store via the mailman (and after 1920 to Hensen's store also). Adair made a weekly trip to Kalispell, and then the mailman delivered the orders to the customers. Homesteaders could order anything from "horsedrawn hay rakes to upholstery tacks to baby shoes to English teas." Prohibition (1918-34) did not stop all from indulging in alcohol; during this period some settlers regularly ordered 100-pound sacks of sugar (Hamor 1975:9; Walter 1985:12, 14-15).

Blackfeet National Forest officials seemed to interpret the forest homestead regulations rather liberally at times. In 1906 Edward R. Gay of Kalispell applied for land in the Camas Creek Valley. He owned the Kalispell Malting & Brewing Company, and the Forest Service employee reporting on the application noted that "as he is a brewer by trade and profession and has a very comfortable home in Kalispell - a more comfortable one than he can make of the tract - it would seem that speculation was his reason for applying." Nevertheless, Gay was offered 115 acres on which to file (the other 45 were considered chiefly valuable for timber) (FNF Class).

The growing season in the North Fork was 70-75 days. Homesteaders generally built a root cellar and raised a garden; because of the long winters, root vegetables were an important part of the diet. Most had a dairy cow and a few chickens, plus some horses. As was true elsewhere, hay was the main cash crop, which homesteaders sold to government agencies, tourists, or neighboring ranchers. There was no machinery for harvesting wheat until the 1920s, when a thresher was brought in. Many grazed stock at Home Ranch Bottoms south of Polebridge, but venison remained the primary source of meat. A higher percentage of married couples chose home sites with scenic views than did bachelors (Bick 1986:18, 31-34, 36; Walter 1985: 13).

The early North Fork homestead residences, outhouses, hay sheds, barns, root cellars, and even fences were all built of logs with some purchased items such as doors and windows. The earliest log residences were generally one- or two-room cabins with steeply pitched gable roofs covered with cedar shakes. As they had more time and money, many built new residences that were larger, 1-1/2 or 2 stories, with bigger windows and more milled lumber. The outhouses often had dovetail corner notching, more difficult to construct, which allowed them to be relocated as needed. The barns were generally used for horses in the winter; most of the cattle was sold in the fall or wintered elsewhere (Bick 1986:50, 53-56).

The off-the-farm occupations of North Fork homesteaders varied greatly. Many worked for the Forest Service or Glacier National Park for years, usually doing seasonal work such as trail location and construction, packing, or serving as fire lookouts (see Figure 120). Some helped

build the Going-to-the-Sun Road in Glacier National Park in the 1920s. Some lived on military pensions, worked for the CCC in the 1930s, ran traplines in the winter, worked on the construction of the west side road, constructed log buildings for other settlers, worked in the summer tourist trade at Lake McDonald, or were employed at the oil fields in Canada. Others spent the winters in town. For example, Orville Cody worked in a bakery and George Stepler as a barber in Kalispell. Raising rabbits and knitting angora socks was tried, as was raising elk and training them for racing at fairs (the latter project ended abruptly when the state legislature passed a law prohibiting the fencing in of wild animals) (Bick 1986:36; Walter 1985:12; 24FH470, FNF CR; Vaught ca. 1943:394).



Figure 120. Theodore Christensen and Anna Neitzling (later his wife). Theo Christensen worked for the Forest Service in the early years (courtesy of Glacier National Park, West Glacier).

Some of the North Fork homesteaders, according to historian Jerry DeSanto, were "silent residents who were often very colorful, often very handy on the trail and in the mountains, and very reticent about their past." One of these was "Uncle Jeff" (Thomas Jefferson), who lived at Sullivan Meadow until 1915. He had been a gold miner in California, a Pony Express rider, and a scout for General Nelson A. Miles. Once in the North Fork, he made money by selling his coal claim, and he worked as a guide for scientists and tourists. His home served as the welcome stopover place for non-paying guests traveling up the North Fork (DeSanto 1982:16-19).

Andy Vance was another of these intriguing settlers. He had hunted buffalo, sold elk meat in Livingston, been a guide for big-game hunters through the Rockies from Colorado to Canada, and participated in the Klondike gold rush before coming to the North Fork. Others found homesteading in the North Fork too tame and even too crowded to remain; Paul Abbot left his

homestead on Trail Creek to seek more solitude in Alaska. Another notable North Forker was Jack Reuter, an early squatter on the east side of the river. He had worked on Teddy Roosevelt's ranch in North Dakota and was reportedly the Wannigan of Roosevelt stories (USDA FS "History of Engineering" 1990:48; Hamor 1975:16; Vaught Papers 1/UV).

The North Fork is a good example of the power of word-of-mouth in attracting settlers to an area. Many of the homesteaders were related; one member of a family would settle and then others would visit and later file on a homestead claim themselves. Some experienced family tragedy while living in this remote area. For example, Charlie Wise's daughter died after swallowing a button, and then his wife passed away during the 1918 Spanish influenza epidemic (Bick 1986:17; "Ralph Thayer" 1972).

Providing an education for one's children presented a challenge in the North Fork. There were several schools in the valley over the years; the locations changed somewhat as the concentration of settlers shifted. The schools included a tent on Indian (Akokala) Creek and facilities at various times on Big Prairie, Red Meadow, Trail Creek, and just north of Polebridge (see Figure 121). Some children rode horses to school, crossed the river in a rowboat, or boarded with neighbors or at the Adair store (Hamor 1975:4-6).



Figure 121. School near Polebridge, ca. 1921 (courtesy of Glacier National Park, West Glacier).

In 1911 and 1912, soon after the creation of Glacier National Park, residents of the east side of the North Fork signed a petition asking that it be excluded from the Park. They asserted that it contained at least 50,000 acres of agricultural land and that the rest was valuable timber land

"with no particular scenic value." In 1915 they again appealed, claiming that "it is more important to furnish homes to a land-hungry people than to lock the land up as a rich man's playground which no one will use." They claimed that the area had not been and never would be visited by tourists. The homesteader's petition was not granted, and after 1954 there were no year-round residents on the east side of the river (Kauffman 1954:4, 7; Bick 1986:49).

[text missing in printed edition] cultivated land, "not even a garden." He did note three or four trappers' cabins and the home of Daniel Dooty, one of the forest rangers for the new forest reserve (Ayres "Flathead" 1900:253, 316).

Relations among homesteaders were sometimes strained. According to Middle Fork homesteader Louise Giefer, she was induced to come west by Philip Giefer to file on a homestead; he promised to make his own home on a mining claim. In several lengthy letters to the Forest Service, she stated her case for obtaining the title to the homestead, located near Fielding at the mouth of Bear Creek. She said that she had done all the work on it since settling there in 1906. In July 1912, she reported, her husband "shot at me and put me in fear of my life." She had been unable to live on the land because he had refused to leave. As the Forest Supervisor commented, "the domestic relations of the Giefer family are decidedly complicated." In the summer of 1915, 39 people sent a petition to the U. S. Land Office requesting an investigation of Philip Giefer who, they claimed, was a "habitual trouble-maker" and was responsible for at least six homesteaders deserting their land (FNF Class).

The hopes of the neighboring homesteaders and of Louise Giefer were apparently not realized, however, for in 1923 Philip Giefer was still living on the homestead he had first claimed in 1900. He was doing relatively well, too, for at that time he had a two-story log cabin, a barn, a tool shed, four small outhouses, two miles of fencing, 51.25 acres under cultivation (40 acres of which were irrigated), 22 sheep, two work horses, and harvesting machinery and agricultural tools (FNF Class).

Some homesteaders in the Middle Fork (and possibly other areas as well) turned their anti German sentiment during World War I on their neighbors, and the Forest Service had to mediate their disputes and evaluate the "patriotism" of certain homesteaders as a result. Immediately after the United States entered World War I in the spring of 1917, the regional forester wrote all forest supervisors asking them to report alien sympathizers to law enforcement officers and to list points that might need protection (bridges, tunnels, and so on) (Baker et al. 1993:113).

The National Espionage Act was being used to suppress sedition at this time. In February 1918 a bill intended to suppress free speech became law in Montana, making it a crime to utter, print, or write any disloyal language about the government, Constitution, or U. S. Armies. A person could be fined or jailed for showing disrespect or contempt toward the military, the flag, or the government. The federal Sedition Act, closely modeled on the Montana act, was passed in 1918 and repealed in 1921. According to historian K. Ross Toole, "Montana raised the level of general hysteria higher than any other state." Anyone with a foreign accent or German ancestry was suspect (Toole 1972:139-40; Gutfeld 1979:39, 43).

For example, Nick Badanjak's request for a homestead in the Middle Fork was rejected because the land was more valuable for timber. He protested this ruling, but then neighbors wrote the Forest Service accusing Badanjak of being disloyal. In 1918 assistant district forester F. A. Fenn asked the forest supervisor for more information on why Badanjak did not buy liberty bonds from Mrs. Kruse, the wife of the ranger at Nyack. Badanjak had reportedly told her that he did not have the money and would not "give one cent to help this Government, it's just a bunch of crooks," and that he planned to return to Austria when the war was over. In 1918 the Department of Justice investigated the case, concluding after the war ended that he was indeed disloyal, but that the land could be listed for homesteading without a preferred applicant (FNF Class).

Nyack homesteader Harry F. Davis caused a great deal of trouble for the Forest Service between 1911 and 1914. According to a thick file, Davis wanted to file a homestead claim on land that had been withdrawn for the Deer Lick Ranger Station. He eventually was given some of the land so he could have access to water and a building site. Davis took his case to prominent Flathead Valley citizens and to a lawyer named Thomas. Some light is shed on his motives, perhaps, by a letter from the Kootenai National Forest supervisor, written in 1912 and included in the Davis file:

Mr. Thomas is a shyster lawyer who has made it a point for several years to stir up a feeling of discontent against the Forest Service and especially to encourage litigation between the Government and homesteaders. He makes it his especial business to solicit cases of this kind usually making the prospective client any kind of a wild promise in order to get his small retaining fee. He has been a continual thorn in the flesh to the administrative officers of this Forest as well as to those of the Flathead and Blackfoot (FNF Class)

Harry Davis was also involved in trying to prevent a neighbor, John Edward Warner, from obtaining final proof on his claim in Nyack. Davis wrote the Forest Service claiming that Warner was a fugitive from Colorado and that "his conduct during the war was of a very unAmerican type...He is somewhat of a leader of a community of unAmerican Swedes and is a very undesirable class of citizen." The office of the solicitor decided that there was no basis for these allegations, and Warner obtained the patent (FNF Class).

Other homesteaders took the time to write the Forest Service appreciative letters, such as Essex homesteader Thomas E. Dickey. In 1914 he wrote, "I am very thankful to you for the kindly interest you have taken in assisting me to secure a title to my Homestead here. I have received only the most uniform kindness from all connected with Forestry Department in all the years I have been here, and I am thankful to all" (FNF Class).

South Fork Homesteads

Thomas Danaher and A. McCrea established 160-acre homesteads in the upper basin of the South Fork (Danaher Meadows) in 1897 or 1898. They seeded 60 acres to timothy hay for their 160 or so head of cattle and 20 head of horses. They also harvested about 70 tons a year of wild hay. The distance to market and low crop yields led McCrea to abandon his land and Danaher to sell out to the Missoula Hunt Club in 1907. The latter attempted to raise horses on the land, but

that endeavor also failed. In 1913 four claims in the Danaher Basin were filed, but none were ever occupied. As with much of the South Fork, long winters and distance to market over a rough trail made farming and stock raising uneconomical (Merriam 1966:20; 2 March 1901 letter, 1901 Lewis & Clarke pressbook, FNF CR; Shaw 1967:5, 74; FNF, "Extensive" 1914:6-7).

Another well-known homesteader of the South Fork was Mickey Wagner (real name Skubinznck), who was living on his land at the start of the trail up the South Fork near Coram by 1910. Like other homesteaders, he earned cash and met his residency requirements by working seasonally for the Forest Service. He worked as a cook at Big Prairie, and he helped locate and build many trails in the Coram area (Opalka 1983; "S. Fork" 1967).

Swan Valley Homesteads

Homesteading in the Swan Valley was relatively late; most claims there were established between 1916 and 1920. One reason for the delay was that the Forest Service had to wait until the survey was completed within the primary limits of the land grant to the Northern Pacific Railroad. This created a "perplexing administrative difficulty," especially concerning a 24-mile block of unsurveyed land in the Swan Valley. Until the GLO completed the surveys, homesteaders had to pay the high cost of surveying when applying for patent (W. B. Greeley to The Forester, 31 March 1910, 2300 Rec and Lands - General Corr 1910, RO).

In 1924 T. M. Wiles analyzed the homesteading situation in the Upper Swan Ranger District. He said, "many of the claimants wanted a homestead but it is doubtful if they really intended to make homes of them," and reported that many had returned to their railroad jobs that they held while performing their "so-called homestead duties." Of a total of 112 claims on the district, there had already been 247 filings. He classified the claims as follows: 61 abandoned or deserted after issue of patent; 8 actual homes of owners, from which livelihood was principally derived; 10 temporary stopping places of owners while unemployed; 11 homes of families whose owners worked elsewhere; 15 apparently abandoned prior to final proof; and 7 unperfected entries on which families resided but the livelihood came mainly from outside work. Obstacles included much more work clearing than the settlers realized, poor crops, and no available market. Willis reported that most of the claimants did as little work on their claim as possible, got a reduction in the area required to be cultivated, made final proof, and moved elsewhere, "thus defeating the intent and purpose of the homestead law in at least eight-five percent of the cases" (Wiles 1924: 5).

A number of Swan Valley homesteaders worked during the 1910s for the Somers Lumber Company on the large timber sale in the valley while living on their claims. After that sale, several small sawmills in the Swan in the 1920s and 1930s provided a number of jobs. Some people had taken up homesteads in order to get away from mill work, but they had to return to it in order to survive. By 1919, at least 70 homesteads had been located. Social events included Saturday night dances and fourth of July parties at the guard station at Holland Lake (24LA202, FNF CR; Beck 1981; Wolff 1980:54).

One of the well-known homesteaders in the Swan was Ernest Bond, who came to the Upper Swan Valley in 1894 to improve his health. He was an early forest ranger in the area, and he and

his wife lived in the Swan Lake community for many years. Many of the early settlers of the Flathead Valley were Civil War veterans. "Old Man" Morley was a Union soldier who homesteaded at Morley Point on Swan Lake. Up the Swan River six or eight miles there lived a Confederate soldier named Gildart. When the two veterans met, they never spoke (Flint 1957:30; Craney 1978).

A good example of a proposed homestead that the Forest Service rejected because it was nonagricultural was the application of Joseph Ducett. The land was located in the lower Swan and was under water most of the time. Ducett, a taxidermist and trapper, owned adjacent land on which he raised muskrats, and the forest supervisor felt that the land was well-adapted to muskrat farming and that Ducett planned to sell it to a company that was developing the area's fur industry (FNF Class).

One woman's claim to a Swan Valley homestead was rejected because the Forest Service was able to show that she did not reside on the homestead. The woman, Anna Lambert, owned an abstract company in Missoula, and the government obtained abstracts she had signed as proof that she lived in Missoula. In 1919 she relinquished her claim in the Swan (FNF Adj).

GRAZING AND OTHER COMMODITIES

Introduction

On many national forests in the United States, grazing permits provided the largest source of revenue. The Flathead National Forest, however, had relatively few areas suitable for grazing cattle or sheep, although conditions varied as fires and timber sales changed the vegetation.

Another commodity on the Flathead that has long been popular is the summer huckleberry crop. The Flathead National Forest did not issue permits to commercial huckleberry pickers during the historic period, but the agency did attempt to monitor and manage the harvests.

The physical evidence of past grazing is found in the vegetation of grazed areas and in the occasional presence of old drift fences.

Grazing in the Flathead Valley

The first sheep were brought to western Montana, probably by Jesuit missionaries, in the late 1850s. The discovery of gold in Montana and the rise of mining camps provided an immediate market for cattle. Stockmen established themselves along the Mullan Road. The railroad construction crews and new settlements also created new markets. Cattle were trailed to Montana from Texas, Oregon, Washington, and California. The severe winter of 1886-87 eliminated many of the speculators from the northern plains cattle industry (Burlingame 1942:264, 271, 284, 286).

As rangeland to the south of the upper Flathead Valley became inadequate for the demand, cattlemen came north to Pleasant Valley and Lost Prairie from the Flathead Indian Reservation in the early 1880s. Stockmen drove their herds to winter in these areas after the fall round-ups, but there were no permanent camps there until Charles Lynch settled in the area in 1882. The Thomas Lynch ranch in Pleasant Valley grew to cover about 1,200 acres, with 1,300-1,500 cattle and 300 horses. He sold his stock to markets in Canada and later contracted with the Great Northern Railway to supply beef to their construction camps. Lynch sold the ranch in 1900 (Williams 1940:1-2).

Another cattle rancher in the Pleasant Valley was A. W. Merrifield, who had worked on Teddy Roosevelt's North Dakota ranch. He raised about 2,000 head of stock at peak. During the winter of 1889-1890 Lynch and others lost many cattle. Lost Prairie was settled later by ranchers, in the early 1900s. Two other large stockowners in the general area were Tom and Maurice Quirk, who raised cattle in the Tobacco Plains Valley beginning in 1878. Their operation grew to about 1,500 acres, with 2,000 cattle and many horses, and their markets were western mining camps in the United States and Canada (Williams 1940:1-3).

The first cattle in the lower Flathead were brought in by fur traders in 1850 to trade for horses with Native Americans in the Jocko Valley. In 1855 the Jesuits imported cattle. In the 1870s the nearest major cattle market was in Ogden, Utah, but some ranchers took their stock to Cheyenne to prime fatten the cattle and get them closer to the Chicago market (Bergman 1962:41, 43).

In the late 1880s, cattle and horses were the best cash crop the settlers in the upper Flathead could raise. The stock ran on the open range. There were four large cow outfits at that time, in the Pleasant Valley, the Smith Valley, and in the north valley. The stock lived on slough grass in the winter. Early Flathead Valley settlers had to fence to keep the range cattle out. A severe winter in 1892-1893 killed many cattle in the Flathead. Local cattlemen then realized they had to supplement natural forage during the winter with hay they raised during the summer (Vose 1964:5-6, 12; O. Johnson 1950:73-74).

General Forest Service Grazing

Before the creation of the Forest Reserves, grazing on the public range operated on a first come, first-served basis, with overgrazing common due to unrestricted numbers of cattle. Cattlemen did very well on the western ranges from the years after the Civil War until the disastrous winter of 1886-1887. Sheepmen typically owned 160 acres with water and good hay land, and in the summer they grazed in more remote ranges. By 1900, sheep were outnumbering cattle in the western mountain states (Baker et al. 1993:70; Rowley 1985:16-17).

In 1894, a federal act prohibited all driving, feeding, grazing, pasturing, or herding of livestock on the forest reserves. Public reaction against this act was strong. Western livestock interests pushed for a way to use forage in the Forests, and there was blatant violation of the act because the GLO could not enforce it (Rowley 1985:24; Winters 1950:116).

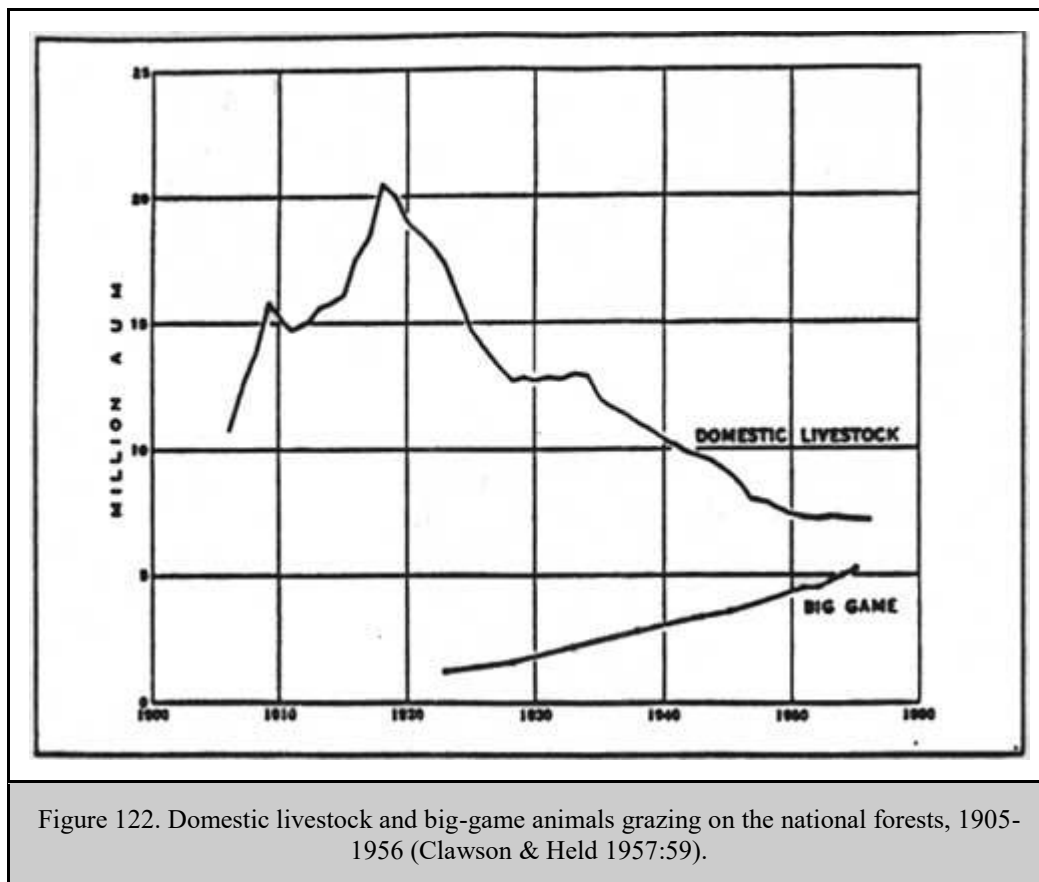
The 1897 Forest Reserve Act did not mention grazing, but an 1897 order allowed grazing on forest reserves if there was no injury to the forest. In 1899 a permit system was introduced. In 1902 the first manual on administrative procedures for the reserves allowed cattlemen to apply for grazing permits, and sheepmen could receive their allotment from a woolgrowers' association. Sheep had to be kept together in flocks, but cattle were allowed to roam at large (Rowley 1985:5, 31-32; Steen 1976:58-59, 67).

Typically one herder would be assigned to each flock of sheep, who stayed with the flock at all times. Sheepmen were assigned specific allotments (the area permitted), as were some large cattle outfits that dominated certain ranges. Many cattle allotments, however, were assigned in common, and sheep and cattle were not segregated in the early years (Roberts 1963:57, 67, 93).

The Forest Service grazing permit system gave preference first to nearby landowners, then to longtime users, then to "itinerants." Its stated purposes were to protect and use all national forest land adapted to grazing, to protect the settler and home builder against unfair competition in the use of the range, and to help the livestock industry through proper care and improvement of the grazing lands. Under the GLO, maximum numbers of stock to be grazed in each forest reserve were established. These numbers changed over the years on the national forests based on range surveys. Beginning in 1906 a small charge was made for grazing on the national forests, but the charge was less than 1/3 the actual value (Rowley 1985:54, 60; Winters 1950:119).

In the early years of the Forest Service, grazing use was the major activity of most western forests. Even though the grazing fees were low, they exceeded timber fees collected by the national forests until 1910 and then periodically for 10 more years (see Figure 122). Until 1917,

range management on the national forests continued to improve through measures such as reductions in the numbers of livestock allowed to graze and redistributions to alleviate overgrazing (Rowley 1985:64; Roberts 1963:35, 111).



The entry of the United States into World War I led to higher wartime stock prices and higher allowable numbers of stock in the national forests. The demand for meat, wool, and leather rose, and many fully stocked ranges were increased by 1/3. The Forest Service was directed to make every acre of grazing lands available, and the War Finance Board extended money to banks to make loans to stockmen to increase their herds. This resulted in damaged resources and did not lead to the anticipated increase in livestock output because the feed was not sufficient to support the increased numbers of animals (Rowley 1985:95, 115; Clawson and Held 1957:58-59).

In 1919 Congress began to press for grazing permit rates to be increased to market rental value; fees on many forests were still barely half of the amount private and state owners asked. Many stock owners outside the national forests felt that those operating inside were getting a subsidy. Low fees decreased the revenue not just of the Forest Service but also of local school and road funds, which were given a percentage of Forest Service revenues. In 1924 the Forest Service completed a range appraisal and evaluation of national forest grazing fees, and the fees were increased. In 1932, however, because of the Depression, the Forest Service reduced fees by half and deferred payment until the end of the season (Rowley 1985:120, 149-150; Roberts 1963:130-132).

Stability in the livestock industry was helped some by long-term permits introduced in the mid-1920s, but the main cause of instability was the possibility of growing demands for national forest permits. In 1936 the Forest Service offered stockmen some protection from competition, including protection from arbitrary reduction of allotments and the establishment of 10-year permits. These concessions were made in response to the threat of the transfer of the Forest Service range to the Department of Interior or to a new department (Rowley 1985:129, 154-155).

Stockmen approved of predator control but saw game such as deer and elk as competing with their forage (animals that fell into neither category were ignored). During the Depression, pressures for grazing rose, but at the same time the carrying capacities were declining because of the regeneration of forests in old burn areas and an increase in wildlife populations (Rowley 1985:77, 79; Baker et al. 1993:147).

During World War II the Forest Service generally did not allow greatly increased grazing allocations as it had during World War I. Region One was an exception: during the 1930s it had continued to reduce its allotments, so in the mid-1940s the Region announced increases in permitted stock (Rowley 1985:198).

The vast public lands outside the forest reserves did not come under government supervision until the passage of the Taylor Grazing Act in 1934. That act provided for millions of acres of the public grasslands to be organized into grazing districts under the control of the Department of Interior. In 1935 the entire 166 million acres of remaining public domain was withdrawn in preparation for a nation-wide conservation program (Rowley 1985:21; R. Robbins 1976:421-422).

Drift fences were built to prevent the natural drift of unpermitted cattle and horses onto the Forest. The fences kept cattle within assigned allotments and others out and divided winter and summer range, protected winter forage, etc. By the end of 1912 the Forest Service had built 650 miles of drift fences and granted many permits for the maintenance of existing fences built in cooperation with the stockmen. The Forest Service granted free use of posts and poles and furnished wire and staples for drift fences and general-use pastures, and the stockmen bore the remaining costs. Because cattle concentrated in accessible areas and watering places, salt grounds and salt blocks were used to move them around (Roberts 1963:101, 103-104).

Grazing on the Flathead National Forest

The Flathead National Forest generally had the lowest numbers of permitted livestock grazing on its land of any national forest in Montana (the other forests with relatively low use were the Gallatin, Cabinet, and Kootenai National Forests) (see Figure 123). About 1929, a Flathead National Forest publication stated that "the demand for grazing privileges...is very light. Then, too, the density of the timber growth renders most of the land unsuited to the handling of domestic stock." On large parts of the Forest, including all of the Primitive Areas, no grazing other than pack stock was allowed, partly to protect the winter range of deer and elk. Local settlers were allowed to graze up to 10 head of animals free. Fees had to be paid on all others, including stock owned by dude ranchers ("Cumulative Grazing and Wildlife Statistics" 1954,

2200 Range Management, RO; USDA FS, "Flathead National Forest" ca. 1929; FNF, "Informational Report" 1939).

National Forest	Cattle & Horses (#)	Cattle & Horses (AMGU)	Sheep & Goats (#)	Sheep & Goats (AMGU)
Absaroka	5,174	18,688	34,742	64,764
Beaverhead	28,227	116,875	150,860	350,617
Bitterroot	2,938	16,703	8,607	30,607
Cabinet	1,034	3,950	7,285	19,890
Custer	24,014	157,511	23,668	48,695
Deerlodge	12,330	46,589	19,892	36,715
Flathead	955	1,542	4,350	13,050
Gallatin	4,371	16,998	26,656	58,323
Helena	9,021	37,390	44,737	79,381
Kootenai	1,712	8,480	1,300	5,850
Lewis & Clark	12,864	48,800	66,223	136,722
Lolo	1,708	7,929	10,390	34,210

AMGU = animal months grazing use.

Figure 123. Livestock permitted to graze on Montana national forests, 1942 ("Cumulative Grazing Statistics, National Forests of Montana, 1919 to 1941" (1942), 2270 - Range Management - Records & Reports, RO).

Although the land considered suitable for grazing changed over time as vegetation changed due to fires, logging, and so on, the Flathead National Forest has never been primarily suited to grazing (see Figure 124). In 1933, the Flathead National Forest listed 158,378 acres as usable grazing land, the Blackfeet National Forest 206,166 acres ("Net Usable" 1933:10).

Year	Cattle & Horses (#)	Cattle & Horses (AMGU)	Sheep & Goats (#)	Sheep & goats (AMGU)
1901	0	0	0	0
1902	323		0	0
1909	88		250	
1910	61		250	
1911	79			
1912	47			
1913	366			
1914	82			

1915	93			
1916	116			
1917	527			
1918	901		18,588	
1919	487		9,825	
1920	581		6,650	
1921	316		585	
1922	249		244	
1923	209		972	
1924	163	1,385	1,292	3,875
1925	174	1,677	2,527	5,631
1926	564	2,162	3,320	10,253
1927	579	2,370	2,064	4,840
1928	324	1,905	986	2,582
1929	580	2,215	5,131	13,779
1930	1,347	2,272	5,143	12,954
1931	1,280	3,422	9,375	24,795
1932	1,413	3,488	10,933	28,518
1933	1,353	3,359	7,244	16,999
1934	1,456	3,536	14,605	36,636
1935	1,290	2,338	14,000	45,175
1936	1,431	2,876	8,900	20,519
1937	1,546	2,924	6,950	19,975
1938	1,867	2,108	4,615	9,238
1939	1,069	1,439	3,250	9,875
1940	1,423	2,750	4,650	13,950
1941	1,467	2,262	4,650	13,908
1942	955	6,542	4,350	13,050
1943	936	1,622	3,750	8,125
1944	1,415	2,244	0	0
1945	1,999	2,654	0	0
1946	1,968	2,577	0	0
1947	1,980	3,057	0	0
1948	2,430	3,092	0	0
1949	2,080	2,163	0	0

1950	1,800	2,614	0	0
1951	1,968	2,515	0	0
1952	1,985	2,910	0	0
1953	2,011	3,096	0	0
1954	1,990	3,084	0	0
1955	2,122	2,426	0	0
1956	1,220	2,742	0	0

AMGU = animal months grazing use.

Figure 124. Livestock permitted to graze on the Flathead National Forest, 1901 - 1956 (includes statistics for the portion of the Blackfeet National Forest consolidated with the Flathead in 1935) (Bolle 1959:254; "Cumulative Grazing Statistics, National Forests of Montana, 1919 to 1941" (1942), 2270 - Range Management - Records & Reports, RO; Rowley 1985:51; Shaw 1967:128).

One of the areas favored for grazing in the Flathead was the Swan Valley, where grazing was closely tied to homesteading. In the late 1880s a stockman from the Flathead wintered his cattle at the head of Swan Lake, and another at the head of the Swan River. The Flathead National Forest later designated this area (after logging by Somers Lumber Company) and adjacent timbered slopes as a sheep allotment, but in 1922 there was no local demand. Local settlers grazed cattle and horses in the Swan Valley in a strip 6-10 miles wide in the valley, only using about 25% of the carrying capacity of the land. The alienated land in the valley complicated grazing administration, so that permits were issued based on the proportion of grazing done on government lands. In 1930, the stock grazing in the Swan River watershed was 221 cattle and horses. The estimated capacity would provide for 800 cattle and horses for a 5-1/2 month season. A report commented that "Withdrawal of the grazing privilege would probably result in about a 50% evacuation of the valley by its present inhabitants and deter any further settlement" (Johns 1943:111, 82; 11 September 1922 memo, Flathead 1920-23 Inspection Reports, RG 95, FRC; "Report on Big Fork Watershed," 28 January 1930, in 2510 Surveys, Watershed Analyses - Analyses of Municipal Watersheds, RO).

Sheep allotments in the Flathead National Forest included areas of the Whitefish Range, the Swan Range east of Swan Lake (including Quintonkon Creek on the South Fork), Bruce Mountain, the Mission Range, the Echo-Coram area, the area between the Middle Fork and Bear Creek, and a few others. Sheep use peaked in 1917 with a total of 18,000 head, and in 1939 it was down to 8,830 head of sheep (Shaw 1967:128; FNF "Informational Report" 1939; 15 September 1927, 2230 - Permits - Historical, RO).

Permits for grazing sheep on the Flathead were never in high demand, largely because of windfalls and the absence of desirable plants. In 1934 a Forest Service inspector commented that local residents were "very bitter against the sheep on account of the fact that the winter deer range is depleted by the sheep, although they do not report any unusual losses in deer from starvation." The ranger in the Swan and the forest supervisor recommended no sheep permits in the Swan, although at that time there were allotments on the Swan/South Fork divide (Baker et al. 1993:71; 8 March 1934 memo, Flathead Inspection Reports Region One, RG 95, FRC).

One of the allotments in the North Fork was on Shorty Creek below Nasukoin in the 1930s. Paths of snow slides there provided good forage. The head of Red Meadow Creek also supported one band of sheep. In the Tally Lake area in the 1930s, Island Meadows issued a small grazing permit, and cattle grazed Star Meadow beginning in 1935. Several bands of sheep were driven over what is now the Big Mountain Ski Area to summer range in the early 1930s (Yenne 1983:52; 19 September 1930 memo, Flathead Inspection Reports Region One, RG 95, FRC; 24FH41, FNF CR).

In 1952, a Flathead National Forest report recommended grazing cattle in ponderosa pine woods to trample the soil and encourage ponderosa reproduction. Until then grazing in the Tally Lake area had been confined to small herds of locally owned cattle using natural meadows during a short summer period (Ibenthal 1952).

The Flathead National Forest has traditionally received much use by pack animals, and the Forest Service regulated their grazing. For example, in 1941 about 200 horse-months of forage were required on the Big Prairie Ranger District for the use of visitors' stock, and another 200 for government stock. By 1958 Big Prairie was supporting an average of about 500 animal months of grazing of commercial pack stock (and private stock was about equal in use) (Gaffney 1941:429; 24PW1003, FNF CR).

After World War I ended in 1920, many stockmen in Montana, especially cattlemen, faced a sudden and sharp decline in livestock prices and went bankrupt. During the early 1920s prices climbed, but then the drought and the Depression beginning in 1929 led to forced liquidations of both cattle and sheep herds. By 1927 Montana had organized state grazing districts that combined private, state, and federal lands into a grazing commons, with grazing rights allocated to district members. The 1940s were good years for stock in Montana, and the range recovered. During World War II beef cattle were raised at record levels, but the production of sheep declined due to a shortage of experienced labor and high cattle prices (Winters 1950:120; Burlingame 1957:I, 329-330).

The grazing allotments on the Flathead National Forest have changed over the years as conditions and market demand have changed. For example, an allotment in the Nyack area along the Middle Fork and a small area north of Essex were not grazed under permit until 1959, when 24 animal months were permitted. Grazing was prohibited when the South Fork Primitive Area was created, and commercial grazing was also not allowed in the Mission Mountains Primitive Area because of the lack of forage and the rough terrain. Generally the grazing allotments were not overstocked (grazing files, HHRD; 24LC923, FNF CR; Wright 1966:54).

The charges for grazing permits were generally quite low on the Flathead National Forest, as on other Forests. In 1927, Supervisor Hornby recommended that rates for grazing on the Flathead range from 1 to 10 cents per head per month for sheep (it varied depending on the quality of the range and difficulty of access). He recommended that the commercial packers' rates for horses be 12-1/2 cents per horse month, a reduction from 14 cents (15 September 1927, in 2230 - Permits - Historical, RO).

Other Commodities

One of the early-recognized commodities of the Flathead National Forest was the summer huckleberry crop. Many early settlers of the Flathead Valley traditionally picnicked or camped in the mountains during huckleberry season, picking large quantities and then canning them for home use or selling them for income (Flathead County Superintendent 1956:25).

Forest Service employees were involved in huckleberry management early on. For example, in the 1930s the lookout on Desert Mountain spent considerable time with huckleberry pickers in that area to aid in fire prevention and to distribute them so as to better use the crop (his wife manned the lookout while he was on other jobs) (18 December 1938 memo, Inspection Reports, Region One, 1937-, RG 95, FRC).

During the Depression, picking huckleberries provided needed cash for many Flathead Valley residents, and Forest Service campgrounds such as the one near Echo Ranger Station filled with berry pickers. In 1932, the Flathead National Forest (not including the Blackfeet) estimated that 20,000 gallons of huckleberries were picked on the Forest. At that time there was a debate over whether or not huckleberries in some areas of the Forest might be a more profitable use of the land than timber. By the early 1930s labor-saving devices for commercial huckleberry picking had been developed, such as a beater that gathered 50 gallons a day versus 5 by hand or 12-15 by scooper, and a new cleaner that used wire-bottom troughs, replacing the blanket (Swan River Homemakers Club 1993:339; Hammatt 1933:6-7).

HUNTING, FISHING, TRAPPING, AND WILDLIFE MANAGEMENT

Introduction

The Flathead has long been renowned for its abundant wildlife; it is still a favorite area of hunters, fishermen, trappers, and admirers of wildlife. Before game laws, many early settlers killed great numbers of animals and fish for personal use or for sale. The Flathead National Forest has been involved in big-game management since the 1920s, when it began trying to regulate the population of the South Fork elk herd. The agency was also involved early on in fish plantings and in monitoring fur trapping.

Trappers have left reminders of their activities in the form of cabins and other shelters in remote drainages of the Forest. These have been affected by time and severe weather and are often almost melted into the ground. Notches cut into trees for holding a sloping log and marten bait can still be found on many of the high ridges of the Forest.

Hunting

The first significant effort to protect wildlife in the United States was aimed at game species. After 1850, legislation to protect game against uncontrolled hunting was enacted in all the states and territories. The Lacey Act of 1900 prohibited shipment across state lines of game and non-game species contrary to the laws of the state where taken, and migratory birds were given extra protection by the 1913 Weeks-McLean Law. The early years of wildlife conservation focussed largely on protection rather than active management of wildlife and their habitat (G. Robinson 1975:225-226).

Many well-born hunters and fishermen in the 1870s and 1880s supported the "code of the sportsman" and were concerned over dwindling game and habitat. Their concern helped fuel the conservation movement. The dramatic decline of passenger pigeons, of nongame birds, and of buffalo led many people to question whether the country's resources were truly inexhaustible (Reiger 1975:31-32, 50, 64).

Before the State Fish & Game Commission began regulating hunting, many people travelling through the northern Rockies hunted with great abandon. Professional hunters were hired to provide game to railroad construction crews working their way across the state. By the early 1890s hunting and fishing parties were moving to the Flathead Valley to take advantage of the area's wildlife resources. In 1890 the editor of a local newspaper commented on the industry of two Demersville residents who killed 1,500 deer in three months between the mouths of the Swan and Flathead rivers for 30 cents a skin. One upper Flathead Valley resident reported that "the early settler [*sic*] here in the Flathead made a regular practice of waiting until real cold winter weather set in and then killing as many deer as they thought they could use" (Vose 1964:12). (Elk was not then hunted very often because it was located in more remote areas, such as the South Fork.) (Frohlicher 1986:12; "Old-Time Flathead Tales" 1938).

Native Americans also hunted in the area until they were forcibly driven out. Forest ranger Frank Liebig reported that Cree came down every summer from Canada along the east side of the North Fork to hunt, bringing dogs trained to run down moose. They generally went as far south as Big Prairie, sometimes a little farther. The last group of Cree he saw, in 1905, reported dragging out 15 to 20 moose every year. Liebig "chased the last band out" in approximately 1905, continuing:

Settler[s] began to take up Homesteads in the Valley, and were complaining, that all the game was being killed off. So we had orders to take them [the Cree] back across the line. The[y] didn't want [sic] to go at first, but after we killed about 7 or 8 dogs, and the[y] saw we meant business, the[y] packed up and went back across the line, and never came back, except 2 years later 2 tepees came 4-5 miles across the line, but the[y] were there only a few days, when we heard about it, and we got them speedily back across the line again (Liebig, ca. 1940, in Vaught Papers 1/LO).

Louis Sommers recalled that the Stonies came down from Canada along the North Fork hunting in the falls of 1891, 1892, and 1893. "The latter year the ranchers organized and drove them out," he stated (Vaught papers 1/UV).

In 1895 the first Board of Fish and Game Commissioners was established in Montana. The 1895 game law limited each hunter to 8 deer per season and established seasons for various wildlife, including birds and fur-bearers. The use of dogs to chase wildlife or of dams or poison explosives to kill fish were prohibited ("The New Game Law," *Inter Lake*, 24 May 1895). Over time, the hunting seasons and bag limits were restricted further.

The heavily timbered forests of western Montana were traditionally relatively poor in game compared to the plains and open valleys. When David Thompson traveled through northern Idaho and western Montana between 1808 and 1812, he found game scarce (although this was partly due to the game not using the river bottoms at the time of year he traveled there). Big game populations dropped to a historic low in the 1890s and early 1900s. Numbers began to rise again due to the creation of the forest reserves, the enforcement of game laws, and later the establishment of numerous game refuges. In the days before many settlers had arrived in Montana, deer and elk were found mainly on the prairies and in the mountain valleys. In approximately 1875 they began moving into the mountains and forests, due to heavy hunting pressure, agricultural expansion, heavy logging, and fires (Koch 1941:359-360, 368-369; Carter 1951: 1).

The Whitefish Divide was at one time considered the best bear country in the state. Hunters killed many black and grizzly bear there each year (see Figure 125). The population of elk in the Flathead Valley area in the 1890s was apparently quite low. Most accounts mention seeing elk only rarely. Forest Service employee and North Fork homesteader Ralph Thayer mentioned a planting of elk in the North Fork in 1910 and said that trappers reported seeing them only rarely before that (Butler 1934:233; "Ralph Thayer" 1972).



Figure 125. North Fork homesteader Mae Sullivan posing with dead grizzly bear, ca. 1930 (courtesy of Glacier National Park, West Glacier).

GLO forest rangers acted as game wardens within the forest reserves. Lucius Hoffius, stationed at the head of Lake McDonald, in 1899 wrote to L. O. Vaught, summer resident of Lake McDonald, that locals were accusing Vaught of killing 10 deer under Hoffius' nose:

Now my policy has been not to pry into the doings of visitors too closely, and while your party may have violated the game laws, I do not believe it.

Hoffius asked Vaught for a statement denying the charge "that I may use it if necessary in closing their mouths" (Vaught Papers 2/O).

In 1900, Native Americans were still setting fires in some areas to aid in hunting. Forest ranger Benjamin Holland in the Swan Valley reported catching three different Native Americans setting fires (and he counted 64 deer and elk in their camps). As a forest ranger, he could only report the incident to the Supervisor. By 1905, however, all forest reserve employees had the authority to arrest people violating laws and regulations relating to the reserves. In 1908 Forest Service officials were asked to aid in the enforcement of state laws regarding stock, fish, game, and forest fires (31 July 1900, entry 13, box 4, RG 95, FRC; Kinney 1917:248).

The enforcement of game laws always presented a problem, and apparently some forest rangers even violated the game laws themselves. As Forest Service inspector Elers Koch commented in 1906 after visiting the Lewis & Clark Forest Reserve:

There seems little doubt that some of the rangers in the interior districts sometimes kill game out of season...It is undoubtedly a great temptation to a man to live on bacon, bread and beans for two months at a stretch with fat deer and elk practically in his door yard, and fool hens sitting beside the trail, to be had for throwing a stone, but if the rangers are to do anything toward enforcing the game laws they will have to comply with them absolutely themselves (28 November 1906, "Reports of the Section of Inspection," entry 7, box 4, RG 95, FRC).

This suspicion is confirmed by an account of a 1907 rangers' meeting along the White River. Forest Supervisor Bunker "nearly brought on a riot" when he told his men that they would be fired if caught violating the game laws. In fact, said one participant, they had venison at the meeting and would have had venison even if the game season had not been open. The rangers were used to living in the mountains and killing game when they needed it (Clack 1923a:7).

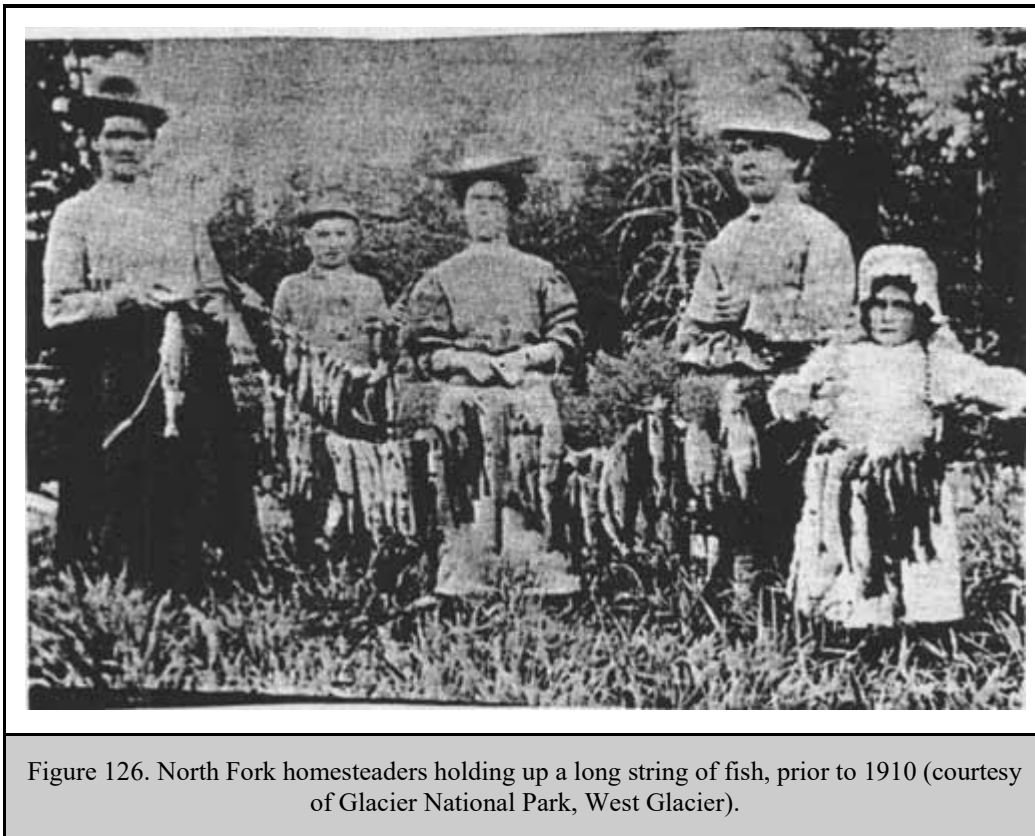
In later years, however, Flathead National Forest officials handled a number of game-law violation cases, and in almost all cases brought to trial the defendants were found guilty. For example, between 1921 and 1927 the Flathead handled 26 cases, the second highest number after the Kootenai ("Game Law" 1929:26).

Fishing

As with big game, early fishing practices were often wasteful. Many fish were caught in nets and then sold, and in 1929 the legal catch for trout was still high (40 fish per day). In 1889, for example, three Flathead residents returned to town from a fishing trip on the Middle Fork with

over 600 pounds of mountain and salmon trout (*Inter Lake*, 1 January 1889). According to a 1900 report, all the streams in the area were "remarkably full of trout," with the most abundant about 12" long and weighing 1-2 pounds (Ayres "Lewis & Clarke" 1900:55). In 1901 Gust Moser opposed an application to establish a fish hatchery at Crystal Lake, saying that people used hatcheries as "clear subterfuge" to get around state fish and game laws, taking trout by the net to get spawn but not returning trout to the lakes (Shaw 1967:131; 20 March 1901 letter, Lewis & Clark pressbook, FNF CR).

Recreational fishing has a long tradition in Flathead National Forest waters (see Figure 126). The three principal natural species of game fish in the 1890s in the Flathead were Rocky Mountain spotted trout (cutthroat), Dolly Varden (bull trout), and native whitefish. Since then, other species have been introduced, including grayling, rainbow trout, German brown, various species of whitefish, and salmon. Kokanee salmon were introduced into Flathead Lake in 1916 (Shaw 1967: 131; Baker et al. 1993:99).



Stocking of the streams was done by the Forest Service, the state, sportsmen's associations, and others. For example, in 1939 Flathead National Forest officials, in cooperation with the State Fish and Game Commission, planted several hundred eggs and fingerling trout. By the terms of a cooperative agreement, Forest Service pack and saddle stock were used for planting whenever possible. The eggs' average hatch was about 75%. The area's fish population had declined because of inadequate fish ladders on the Bigfork power dam and on two Stillwater River dams; the presence of large numbers of cull fish detrimental to trout; the introduction of exotic species; unscreened irrigation ditches; silting from erosion in the agricultural areas of the valley; and

inadequate fishing regulations and enforcement. The cooperating agencies planned to plant every "stream of importance" every two years and to stock as many lakes as possible by packing eggs to them (FNF, "Informational Report" 1939; R. West 1938:4-6).

By 1936 Region One of the Forest Service was doing water surveys, determining available fish food supplies, improving the streams for fish, and extending its fish stocking program. In 1938, of the 28 species of fish in the upper Flathead Valley drainage, only 10 were native. The streams and lakes were fished in direct proportion to their access by road. In 1938, the Forest Service prepared a plan to improve the fishing opportunities in the Flathead by stocking streams with the entire output of the Somers and Station Creek State Fish hatcheries (ca. 5 million fry) and to improve habitat, to construct rearing ponds, to regulate the annual catch, and to restore natural conditions (R1 PR 767, 30 November 1936; R. West 1938:2-3).

Trapping

Independent and often illiterate fur trappers leave few records, so it is difficult to know how heavily trappers were exploiting the resources of the Flathead Valley in the late 1800s. Some men stayed in the area after the fur trade era of the early to mid-1800s had ended. One fur trapper, a man named Upton, reportedly worked in the Swan Valley in 1866. A Douglas-fir tree at the site of today's Spotted Bear Ranger Station (at the confluence of the South Fork and the Spotted Bear Rivers) was found with two bullets that had been shot into it in approximately 1862, presumably by a trapper (Conrad 1964:26; Mendenhall 1925:15).

Early Flathead settler George Stannard reported on the Flathead fur trade of the late 1800s. He came to the Flathead Valley in 1888 and worked as a bookkeeper for storekeeper T. J. Demers. He reported that 30-50 other men, independent American trappers, came from the north each year to sell their furs, bringing them in on pack horses. They traded mink, marten, beaver, fisher, coyote, fox, and some bear, wolverine, and otter at Demers' store. New York fur buyers would come out and ship the furs to New York by the Northern Pacific Railroad (Vaught Papers 1/IL).

A winter's collection of furs could be large. For example, six French Canadians spent the winter of 1896-97 trapping the Big Salmon Lake area in the South Fork. They brought out 2,700 marten pelts and other furs in the spring (Shaw 1967:129).

Trappers' cabins of the late 1800s and early 1900s were typically built of logs chinked with quarter-rounds and had a dirt floor and a low ceiling. Usually the door was low, and there was only one window or none at all. The cabins were small, averaging about 10' x 12' in size. They generally were located near a source of water. According to long-time Forest Service ranger Charlie Shaw, at one time the remains of trapper's cabins could be found in nearly every drainage of the interior of the Forest (site files, FNF CR; Shaw 1967:129).

These small cabins could be far from comfortable, even in the summertime. One Forest Service worker described his despair while spending a night alone in a trapper's cabin on the Middle Fork in 1908:

as I write this I am sitting on the floor of this shack and have my book on the door sill the cabin is about twelve by nine with out any window the door is twenty inches wide and four feet high I can just stand straight up under ridgepole. I am going to hang up my shoes tonight I am afraid the rats will eat the patch off of the one they cut a hole in last night. I have killed one darned old rat allready [*sic*] and am looking for more with Blood in my eye good night (8/28/1908, diary in FNF CR).

Author and politician Frank Linderman described how he trapped beaver along the Swan River in the 1880s. He used "Beaver medicine" to attract the beaver to his traps. This was a mixture of castor oil, cinnamon, allspice, and cloves in equal parts, mixed with beaver oil from the glands. He used a special blaze to mark where he had set his traps. Before winter set in, he killed meat, saving the heads, necks, and offal for bait (these and other bait meat were often dragged along the traplines to attract fur-bearing animals). After trapping beaver, he would skin the hides out and then flesh them. The hides were then stretched and sewed into round willow hoops and hung up to dry. To attract martens, trappers mostly used fish entrails and heads for bait, plus anise oil (Linderman 1968:12-13; Downes 1994).

Japanese immigrant Ichinojo Sakurai trapped the Whitefish Divide after coming to the Flathead with a Great Northern construction crew. One of his cabins was an abandoned Forest Service cabin in China Basin (inappropriately named for him). He died near his cabin in the China Basin in 1918 during the Spanish influenza epidemic, and his body was cremated the next summer next to the cabin. According to at least one person, Sakurai was mapping the Whitefish Divide for Japanese intelligence. Sakurai also used a cabin now located close to the Danny On trail on Big Mountain; two other trappers trapped intermittently from that cabin until 1931 (24FH50 in FNF CR; Cusick 1986:23).

Some of the area's trappers were quite well known. For example, "Soup Creek Harry" Johnson, an early trapper and Forest Service ranger in the South Fork, was reputed to be the "Mad Trapper of Rat River" of Canadian legend, who had led the Royal Canadian Mounted Police on a long and bloody manhunt. Scotty McDougall was another trapper who achieved more than local renown. He had a cabin near Mountain Meadow on Grave Creek up the North Fork. McDougall was killed in his cabin by an avalanche in 1897. Writer Ernest Thompson Seton wrote a story about this event, and Krag Peak and Krinklehorn Peak are named for a large ram that McDougall killed and had mounted in his cabin (24FH28 in FNF CR; O. Johnson 1950:260-61).

Joe Bush, a German immigrant, trapped in the Upper Whitefish Lake area. He had two cabins along his trapline, plus a ranch on Whitefish Lake. Bush's real name was Rudolph J. Werner (Werner Peak was named for him), but he reportedly obtained his name by telling people "I am Joe and live in the bush." Bush came to the Flathead Valley after working for the Northern Pacific Railroad from 1881-83. Besides trapping, he also worked as a packer for the Forest Service, and he reportedly burned the cabins of rival trappers when he came upon them. Trapper Charles H. "Dad" Lewis also lived at the head of Whitefish Lake. Lewis had been a buffalo hunter, had participated in the Oklahoma land rush, and was a Spanish-American War veteran (24FH109 in FNF CR; Schafer 1973:7, 9).

Another trapper whose name was adopted as a place name was "Old Man Tally," the man for whom Tally Lake was named. According to various people who knew him, he was a HBC trapper who stayed in the area and "discovered" Tally Lake in 1892 while prospecting for valuable minerals. Tally lived in various camps near the lake, such as a cabin at the inlet that had only a canvas blanket for a door. He was a short man with poor eyesight. As he aged, he could not see well enough to kill game, so he used a set gun to kill deer. He came out to town twice a year to buy supplies, mainly salt and snuff. An 1896 newspaper description of Tally is as follows: "The old man is 67 years of age and notwithstanding this he plunges in to the mountain fastnesses and lives alone for months at a time. He can't walk as far as he used to but still manages by the seductive display of alluring baits to catch all the coyotes, lynx, etc., that come his way" (Vose 1952; "The Very Interesting Story of How Tally Lake Got It's Name" [sic], 1896, in TLRD).

A number of Flathead Valley trappers died violent deaths, some deliberately killing themselves in their cabins. One, a man named Slim Link, did so accidentally. He trapped in the North Fork on both sides of the international boundary and was reportedly a deserter from the Canadian Navy. In 1907 he attempted to kill a grizzly bear that had been bothering his cabin on Kisheneh Creek. Link arranged a set gun to kill the bear, but somehow he tripped it and was shot and killed by his own gun (Green 1969:I, 88; USDA FS "Early Days" 1962:209; Gregg 1991).

Trappers sometimes earned cash in the woods by unusual methods. For example, a trapper in the Tally Lake area raised a small garden of monkshood and rhubarb in a clearing by his cabin, both of which could be sold at that time on the drug market (Hutchens 1968:878-88).

A minor industry in the Flathead related to furs was the raising of fur-bearing animals on ranches. Several companies in the 1920s raised muskrats and blue foxes on natural sloughs, such as one near the Swan River that stocked 2,400 muskrats. In the mid-1920s the value of the annual muskrat catch was 1/3 that of the entire annual fur trade in the Flathead Valley (City of Kalispell 1926:44, 48).

Pelt prices for wild furs rose to high levels in the late 1920s, and then they dropped with the Depression beginning in 1929. Trapping in the Flathead Valley gradually tapered off after the 1930s. One trapper, Glenn Johnston, reported that his best year trapping was in 1915, when he caught 800 muskrats, five otter, coyotes, mink, and weasel. He felt that "trappers caught then more for the pleasure and challenge rather than strictly commercial as it is now" (in 1950) (Hash n.d.; "Glenn Johnston" 1950:3)

During the Depression of the 1930s, many Flathead residents earned cash by trapping in the winters (see Figure 127). They trapped high in the mountains for marten and weasel and in lower areas for mink and otter. In 1941 the Forest Service estimated that there were about 200 trappers operating on the national forests of Flathead, Lake, Lincoln, and Sanders counties. Fur values rose in the 1940s and have been fairly stable from the 1950s to the present (Craney 1978: Sundborg 1945:67; Hash n.d.).

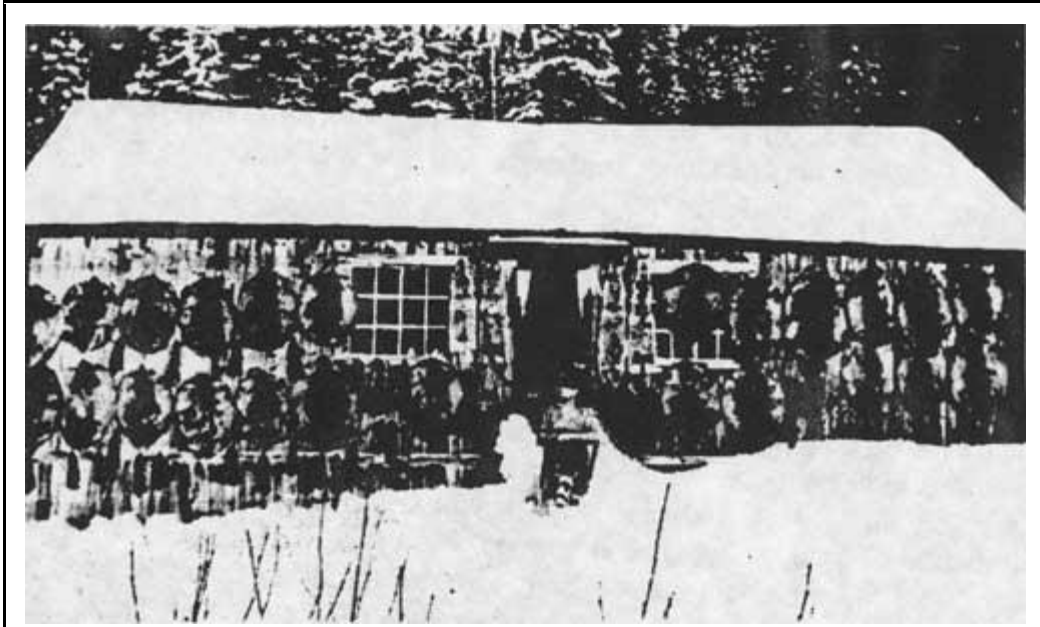


Figure 127. Charlie Wise and Levi Ashman with beaver, squirrel, marten, mink, coyote, and weasel pelts, Akamina Valley, British Columbia, 1934 (courtesy of Glacier National Park, West Glacier).

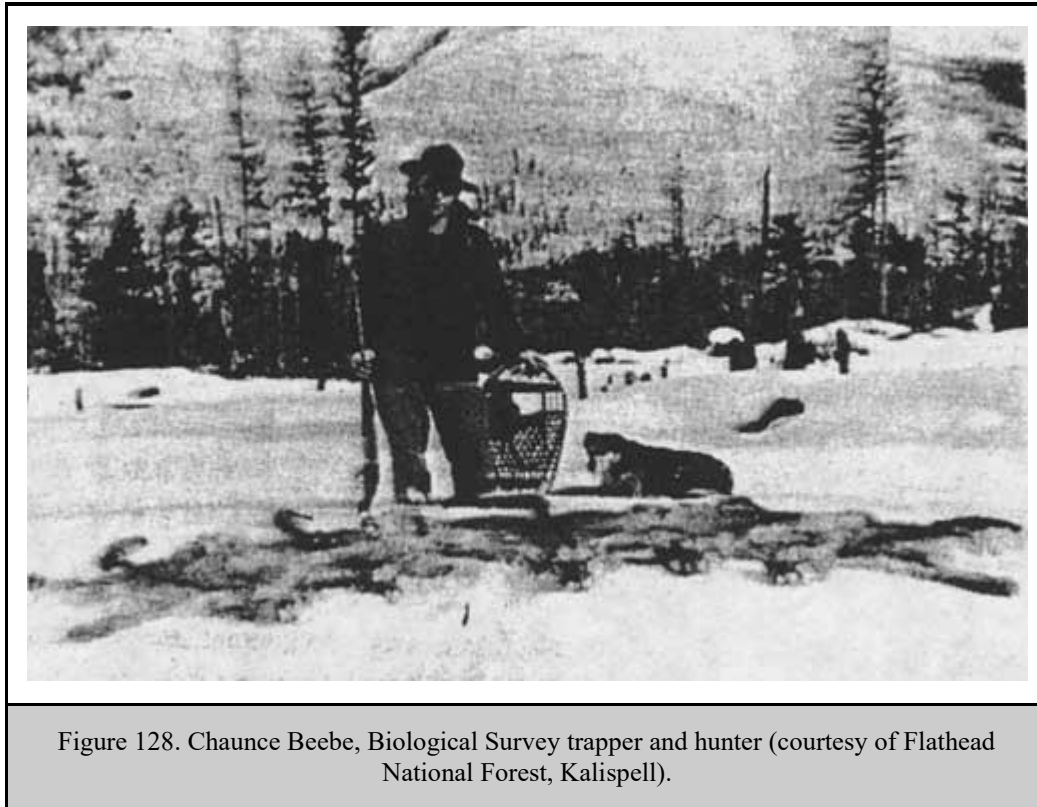
Forest Service Wildlife Management

Teddy Roosevelt, responding to the slaughter of game he saw in the West, founded the Boone and Crockett Club in 1887. This organization worked to preserve big-game habitat and animals. By 1900 there was a growing sentiment for wildlife restoration. By 1905, when the Bureau of Biological Survey was established, the policy of control or repression of undesirable wildlife was being emphasized. Wildlife conservation laws and enforcement led to increasing populations of big game. Gradually heavier winter kills and damage to the forage were noted, and in some areas elk were reported to be replacing deer (T. West 1992:11; Winters 1950:139-141; Carter 1951:1).

The Forest Service's wildlife department emphasized predator control. Beginning in 1915, Congress began appropriating money for destroying wolves, coyotes, and other animals considered injurious to grazing and agriculture. The government agency responsible for wildlife, the Biological Survey, was directed more by economic pressures than by scientific research. In 1939 Congress consolidated the Bureau of Fisheries and the Biological Survey into the U. S. Fish and Wildlife Service (Steen 1976:87; Swain 1963:44-45, 49).

Wildlife was first protected against hunting in a national park in 1894 in Yellowstone. In the early years in the national parks, the primary concern was for deer, antelope, and bighorn sheep, so they were protected by killing their predators. By 1939 this method was used only to prevent the extermination of vanishing prey species. The control methods included poison (strychnine was used in Glacier National Park), steel traps, shooting, and trailing with dogs for cougars (G. Robinson 1975:226; Cahalane 1939:229, 232-233).

The states first tried the bounty system for controlling predators. In 1914, the Biological Survey began to experiment with other control methods. By the 1930s, selected men worked as salaried hunters for the Survey (see Figure 128). In the 1930s control of porcupines was instituted because they ate the terminal buds of young trees being planted in national forests (Connery 1935:85, 98; Baker et al. 1993:96).



The movement of settlers into mountain valleys of the Flathead resulted in the near extinction of the mountain lions in the area. One winter Charlie Ordish, said to be the best lion hunter in the United States, killed 97 lions on the Swan Range near Echo Lake (Flint 1957: 18).

Besides predator control, the state also tried transplanting desirable species to areas in which they had once lived or that had suitable habitat. One game transplant manager trapped about 75 mountain goats on the South Fork in approximately 1949 and then floated them downriver in a rubber boat about 9 miles to Black Bear Ranger Station. Many of these goats were relocated in the Gates of the Mountains area near Helena (Gildart 1985:101-102).

Until the World War I era, Montana depended on law enforcement to manage the game in the state, not on science. Soon after the war, game preserves were seen as the solution. Many game preserves were established on national forests to protect deer, elk, and other game. The Sun River Game Preserve, covering about 200,000 acres east of the Continental Divide, was established by the state legislature in 1912 because of concern about the elk population. This game preserve, however, did not provide critical winter range for the elk and deer. In time, game preserves proved to be less successful in game management than were bag limits and other

hunting regulations (Burlingame 1957:11, 23-24; Cox 1985:230; Graetz 1985:60; Shaw 1967:72).

In 1936 the Division of Wildlife Management was established in the Forest Service. The National Wildlife Federation was founded that same year. By 1950, Forest Service policy was concerned more with game management than with preservation. Planes were first used to help in estimating wildlife populations in 1931. In 1936 Region One had 240 men carrying out a big-game study to use in a scientific approach to the management of big game, enabling them to regulate hunting on a sustained-yield basis. In 1932, the Forest Service dropped hay to starving deer for the first time (Winters 1950:144; R1 PR 675, 11 January 1936; Clepper 1971:184).

The 1937 federal Wildlife Restoration Act imposed excise taxes on guns and ammunition for the restoration of native wildlife. This had a significant effect in Montana. The funds raised were used to finance the restoration of game animals and birds (Burlingame 1957:11, 24; Rowley 1985:166).

During the Depression, big-game herds increased. Although there was more poaching during those years, the pressure of sportsmen on big game was reduced. Populations of other animals in 1967 were as follows: 250 grizzly bear, 1,200 black bear, and 450-500 moose. Some areas of the Flathead National Forest may have at one time been open grassland with buffalo herds in the summers. A buffalo horn was found beneath four feet of gravel up spotted Bear Creek while digging a root cellar at Limestone Station (Rowley 1985:166; Shaw 1967:114-116; Thol 1936:12).

The number of mule deer in the Flathead National Forest has not fluctuated as much as whitetail deer and elk populations. Whitetail deer wintered in large herds and in some years great numbers died of malnutrition. In general in Region One, deer populations rose significantly after World War II because of new state hunting regulations and predator control (Shaw 1967:113; Baker et al. 1993:90).

Deer herds on the Flathead National Forest have varied greatly in population (see Figure 129). Extensive fires on the Forest prior to 1930 created a great deal of favorable browse growth and resulted in large deer herds. Since then the transition to timber led to the starvation of large numbers of deer (for example, approximately 1,000 died in the Swan Valley during the winter of 1956-57). The Flathead National Forest began clear-cutting in small blocks to provide varied habitat to deer and help with browse growth within winter range areas (FNF "Timber Management, Swan" 1960:17-18; FNF "Timber Management, Coram" 1961:16).

Year	Black Bear	Grizzly Bear	Deer	Elk	Moose	Mt Goat	Mt Sheep
1919			5,385	1,500	1,100	515	
1920			5,420	1,450	520	1,015	20
1921	640	235	5,114	1,200	480	1,075	30
1922	474	140	4,229	757	242	416	
1923	567	155	8,380	905	175	610	

1924	685	179	6,918	1,262	180	537	
1925	625	148	5,746	1,349	151	560	
1926	850	167	6,077	1,522	159	600	
1927	870	164	4,800	1,407	97	662	
1928	705	194	5,080	1,517	100	642	
1929	740	214	5,260	1,547	110	650	
1930	725	232	4,900	1,637	120	695	
1931	625	173	4,400	1,590	103	705	
1932	575	120	3,970	2,900	115	685	
1933	505	144	4,340	2,800	120	685	
1934	480	130	4,500	2,900	110	700	
1935	450	160	4,500	3,000	125	800	4
1936	478	160	4,175	4,266	145	835	4
1937	500	150	3,800	4,500	200	850	5
1938	550	150	4,200	4,900	170	1,200	
1939	600	160	4,200	4,500	200	1,200	
1940	640	150	4,800	4,700	240	1,250	15
1941	700	170	5,000	4,800	240	1,300	20
1942	760	170	5,500	4,800	260	1,300	20

Figure 129. Estimates of big-game animals, Flathead National Forest, 1919-1941 (includes estimates of the portion of the Blackfeet National Forest consolidated with the Flathead in 1935) ("Cumulative Grazing Statistics" 1921, HHRD:21; "Estimates of Big Game Animals, 1942; 2270 Range Management - Records and Reports, RO).

The South Fork of the Flathead was long used by Native Americans for hunting. They established summer camps and remained for weeks hunting elk and deer and drying the meat, which they then carried out by pack train. Unlike other parts of the Forest, the South Fork reportedly had considerable numbers of elk for many decades. The first record of elk wintering in the South Fork was the winter of 1899-1900, when forest ranger Frank Haun reported that approximately 80 head had wintered in the Big Prairie area, about 20 of them dying of starvation (Gaffney 1941:436-37; "Report on South Fork Game Studies" 1936:2).

The state legislature created the Spotted Bear Game Preserve in 1923 because of widespread fear that the new road to Spotted Bear would greatly reduce the South Fork elk herd (see Figure 131). In 1923, at the request of the Forest Service, a Biological Survey hunter was sent to hunt mountain lions in the Big Prairie Ranger District. The elk herd in the entire South Fork was then estimated at 1,200. In 1928 salting of elk in the Game Preserve began. During the 1930s there was much discussion of opening the landing fields in the South Fork to increase access for elk hunters. Bob Marshall wrote in opposition to the proposal because it would set an undesirable

precedent, and the project was dropped the next day. In 1936 the Spotted Bear Game Preserve was eliminated, which helped the excess elk problem somewhat. Since 1936, hunters had been killing more elk because of the re-opening of the Spotted Bear Game Preserve, the presence of large numbers of elk, and a longer hunting season. Even so, ranger Gaffney felt the kill was still lower than the number that should have been removed (Gaffney 1941:437-438; FNF "Report on South Fork Game Studies" 1936:4; Merriam 1989:83; Merriam 1966:29).

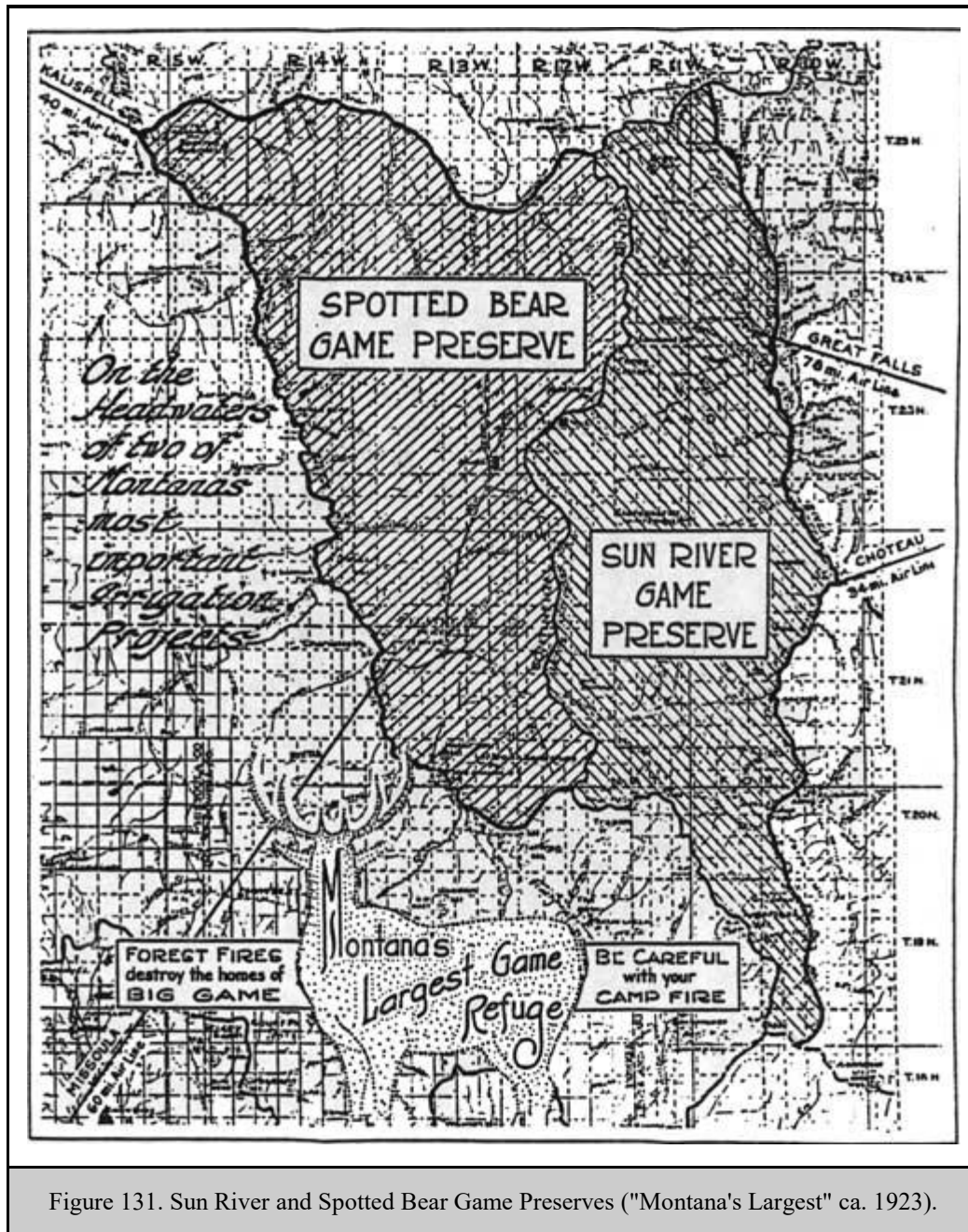


Figure 131. Sun River and Spotted Bear Game Preserves ("Montana's Largest" ca. 1923).

Factors that played a role in the increasing population of elk in the Big Prairie area included the inaccessibility of the area to hunters, the establishment of the Spotted Bear Game Preserve, the

almost complete extermination of the mountain lion, and the decreasing numbers of Native Americans hunting in the area since hunting regulations were instituted. The winter range was first recognized as overbrowsed in the South Fork in 1935, and since then the damage spread from the hillsides and upper benches to the flats and stream bottoms. In 1936 the elk population in the South Fork was estimated at 4,100 but the carrying capacity of the winter range was only 2,600 (and decreasing). Predator and natural losses in the herd were about 250 per year. By 1941 the Flathead National Forest elk population had reached approximately 4,500 head, the largest in Region One, and most were concentrated in the South and Middle Fork drainages of the Flathead River (Gaffney 1941:427, 439, 451).

Beginning in 1923 Forest Service employees took annual winter trips through the elk winter range in the South Fork (see Figure 130). They counted the game in the areas they passed through and recorded the condition of the wildlife and the winter range, also checking for poaching or illegal trapping. An intensive game program began in the fall of 1933, and within a few years studies included the Swan and Middle Fork drainages. The intensive winter studies lasted four winters and determined the amount of big game wintering in the South Fork, the forage used, the influence of snow depth and temperature, the carrying capacity, game losses, migrations, and so on. These studies were followed by annual winter game patrol trips until the winter of 1941-42. After that, Montana Fish and Game put crews into the area for winter studies (Space 1936:6-7; Shaw 1967:106, 108; FNF, "Report on South Fork" 1936:1).



Figure 130. Rangers Mendenhall, Thol, and Hutchinson on winter elk survey in the South Fork, having lunch at Meadow Creek, February 1927 (photo by Henry Thol, courtesy of Flathead National Forest, Kalispell).

For some people, winter game surveys were very serious; for others, the job had its light moments. Pat Taylor of the Flathead National Forest recalled:

With Henry [Thol], when we were snow shoeing, we were snow shoeing, while Bill [Gaffney] and I, if we were snow shoeing and jumped a coyote we'd take after it a hollering and yelling and having a lot of fun (Taylor 1981).

Pat Taylor noted that game patrol was considered a "romantic" job at that time. The public thought the rangers were making sure the game was not being poached, which was not actually their main job. Instead, they were performing such necessary tasks as dissecting all dead animals they found, washing a sample of the stomach content, cooking it in their camp stove, and identifying the contents and parasites. Taylor noted that when the Forest Service began calling the winter work game study instead of game patrol, "then the people thought all I was doing was sitting in the office writing memos or something" (Taylor 1981).

In 1952, Flathead National Forest officials commented that they foresaw no conflicts between wildlife and timber management objectives. Although construction of new roads might lead to more hunting of big game, logging on a sustained-yield basis would improve habitat for game animals and birds by creating fringe conditions. In addition, winter logging provided coniferous foliage and moss for wintering deer herds. The report also mentioned the need to control or prohibit logging along stream bottoms because it damaged the streambed conditions favorable for fish growth and propagation (Ibenthal 1952:18).

CIVILIAN CONSERVATION CORPS (CCC)

Introduction

The Civilian Conservation Corps (CCC) had lasting effects both on the national forests and on the enrollees who worked in the program between 1933 and 1942. The forests obtained large numbers of workers and were able to accomplish many projects, such as road building and snag removal that required a ready pool of labor. The men within the program gained a job and, often, skills that led to subsequent employment. The Flathead National Forest benefitted from several permanent and "spike" CCC camps located on the forest. Another New Deal-era program was the blister rust control program. Although western white pine, limber pine, and whitebark pine were killed on the Flathead by blister rust, the Flathead National Forest was not included within the official control program's boundaries.

Physical remains of the CCC camps on the Flathead National Forest are limited because the camps themselves were systematically dismantled after their period of use ended. Foundations can be seen at several sites, however. The CCC program involved building many roads, trails, recreation facilities, buildings, and so on, and some of these stand today as lasting testimony to the efforts of those young men of the 1930s.

CCC

Soon after Franklin D. Roosevelt became President, he established the Transient Service, a forerunner of the CCC program that was intended to get homeless men off the streets and out of the railroad jungles. One such camp was located on Forest Service land near the Blankenship Bridge and the junction of the North and Middle Forks of the Flathead. It opened in July 1932 and soon had about 150 men working there. They salvaged logs and sawed timber to build the camp and then worked on clearing snags from the 1929 fire. The men received \$1-\$3 per week wages, plus food, clothes, and shelter. The camp ran for two summers and then was shut down. In 1937 ranger Thol started construction of a mess hall and cook's quarters, using ERA labor and salvaging lumber from the old Coram "transient camp" (Green 1972:IV, 21, 23, 25; 24 November 1937 memo, Inspection Reports, Region One, 1937-, RG 95, FRC; "Coram Camp" 1933).

The act creating the Civilian Conservation Corps (CCC) was passed by Congress on March 31, 1933. Over the next 9 years the CCC employed almost 3 million young men, local experienced men, veterans, Native Americans, and territorials in conservation work around the nation. CCC enrollees were typically between 17 and 23 years old, single, came from families on relief, and were unemployed. World War I veterans could also enroll but were housed separately. The Army ran the national forest camps, but the Forest Service developed the operating plans and work schedules. The program peaked in 1935 with more than 1/2 million men in over 2,500 camps in every state and several territories. After 1936 the number of men wanting CCC jobs dropped, and by the end of 1940 there were more positions available than men to fill them. Congress voted to end the CCC program in June of 1942 (Throop:2, 11; Salmond 1967:36, 216; Cohen 1980:18; Otis 1986:17).

CCC enrollees received a minimum of \$30 a month in pay, and \$22-25 of the wages were sent directly to the enrollee's family. Many of these men were away from home for the first time and working at their first steady jobs. Camp life was quite regimented. The men wore Army khaki and blue denim clothes provided from military supplies. They were allowed to leave camp on weekends, although the camps were really self-contained cities; they offered dances, cultural events, sports activities, arts and crafts, and so on. More than 25,600 men from Montana were enrolled in the CCC, and over 40,800 men served in the state. The officers from the military sometimes were frustrated with their civilian charges. One officer was overheard exclaiming to a group of enrollees at Coram, "I know you guys are not in the Army - but I wish to God you were" (Cohen 1980:25, 46-47, 151).

According to long-time Forest Service employee Elers Koch, a critic of the CCC program, it cost about \$1200 a year to keep a CCC boy in camp but the work he accomplished equaled only about \$300-400 in regular appropriations. He felt that the CCC, because of the low results for the money, lowered the morale and principles of regular Forest Service employees. He claimed that many foremen were "permanently ruined," and that "After these years of plenty, the organization has never gone back to its stem principles of economy and frugality" (Koch ca. 1940:169, 172).

The food provided at CCC camps was reportedly terrible (it never was as good as at logging camps, according to one participant). The Forest Service argued for months with the Army about supplying the enrollees with adequate footwear. The Army supplied regular Army leather-soled shoes, but the work required caulks (spikes in the soles) or at least hobnails to provide traction in the woods. This reduced the efficiency of the crews by 20-25% and led to some accidents (Koch ca. 1940:166-167).

During the first year of operation, the Army set up camps without standard plans. The CCC had three basic types of camp: tent camps, rigid camps, and portable camps. All had a flagpole, with an office or administration building directly behind it. A 200-man camp usually required 36 tents with board floors and wood-burning stoves. In 1937, a standard CCC camp contained four barracks, a mess hall and kitchen, forestry agents' quarters, officers' quarters, headquarters, storehouse, welfare building, dispensary, school, lavatory, bathhouse, and latrine (Otis 1986:72, 78-80).

In 1934 the CCC adopted portable camp buildings, and two years later the buildings became standardized and available pre-cut. Spike camps were limited to 20 or 25 people who were usually absent from the main camp on weekdays only. They were supervised by Forest Service rather than Army personnel and had a generally high level of production (Otis 1986:8-9, 73, 77; Cohen 1980:26). When a Forest Service CCC camp was relocated, the materials were salvaged or the buildings moved, and the Forest Service was given the first chance to obtain them.

The first CCC camp in Montana was built in 1933 for the Stillwater State Forest. At that time there were no roads on the state forest except Highway 93; CCC crews built a road from Olney to Upper Whitefish Lake and built the first state lookout (on Dog Mountain). They also felled snags left from a late-1920s fire. The state also later had a camp on the Swan River State Forest. Both state forest camps worked mainly on road construction, bridges, phone lines, horse trails, buildings, lookouts, recreational campgrounds, hazard reduction, and fire suppression. In 1939

the Stillwater State Forest got its second CCC camp, near Stryker, which was active until 1942. The men at this camp removed snags and opened roads (Cusick 1986:5-6, 9; Moon 1991:94; Sharp 1988:59).

During the years of the Depression, when logging was slow in the Flathead, many local men experienced in woods work or in carpentry were hired to serve as CCC camp foremen and logging superintendents. The Forest Service was also authorized under the Emergency Relief Act to recruit men as supervisory personnel. Many of these were graduates of forestry schools, which helped to professionalize the Forest Service. "Local experienced men" furnished their own clothing but lived with the employees. Many served as truck and tractor operators, as drillers and dynamite handlers, or directed construction work (Koch ca. 1940:169; Caywood et al. 1991:52; Sharp 1988:3).

Flathead residents, like people in other parts of the country where CCC camps were located, were not initially welcoming to the enrollees. Small-town residents were concerned about local job displacement, family safety, and other issues. Before the first New Yorkers arrived in the Flathead, the *Daily Inter Lake* mentioned that residents were skeptical about the "street-slum foreigners" being sent to the Flathead (11 April 1933). Generally, after the CCC camps were established the locals recognized that they helped the local economy and became much more supportive of the program (Otis 1986:2).

African-American CCC enrollees were segregated from Euroamerican enrollees as a matter of policy. Glacier National Park and the Kootenai National Forest each had at least one African-American camp, but the Flathead National Forest apparently did not (Otis 1986:7; Renk 1994).

CCC camps offered educational programs to enrollees, featuring both vocational and academic courses. For some, working in a CCC camp opened the way to a career. Carl Wetterstrom, for example, was a CCC enrollee in Washington state. He later worked as an assistant ranger, then as a CCC foreman on the Flathead National Forest, and later as a district ranger on the Forest (Salmond 1967:53; Baker et al. 1993:128).

By the end of 1940, nearly 105,000 men had served in Region One national forest CCC camps, providing approximately one million worker-days of labor. All CCC men who worked in the Flathead Valley were within the Ninth Corps area (this included eight western states), which in general sent about half the enrollees to other areas during the winter. The Missoula District included western Montana, Glacier National Park, and Yellowstone, and Fort Missoula was the training, supply, and dispersal point. When the CCC program peaked in Montana, there were 32 camps in the state (see Figure 132) (Otis 1986:17; Ober 1976:32; Caywood et al. 1991:50).

Camp name and designation	Camp location

Red Meadow (F-6)	North Fork
Flathead (F-77)	north of Columbia Falls
Citadel (F-15)	Coram
Elk Park/Bridgehead (F-48)	Coram
Tally Lake (F-5)	Logan Creek
Olney (SF-207)	Olney
Goat Creek (SF-206)	Swan Lake

Figure 132. CCC camps on Flathead National Forest and Stillwater and Swan River State Forests, 1933-1942. Glacier National Park had 16 CCC camps during this period, including several in the Belton (West Glacier) area ("CCC Information," Intaglio Collection, UMA).

CCC enrollees on the Flathead National Forest worked on a great variety of projects. Their jobs included removing snags left by the 1929 fires, widening and maintaining roads and building campgrounds, picnic tables, roads, fences, phone lines, bridges, and lookouts. Many of the CCC projects completed on the Flathead National Forest might not have been done otherwise for years to come (Otis 1986:19; Taylor 1981; McDonnell 1937:36). The men also served as a readily available labor pool in case of forest fires.

CCC enrollees on the Flathead National Forest, like elsewhere, were required to live up to Army expectations. After an inspection of detached crews working on trail construction and maintenance that were run by Forest Service district employees, the inspector commented:

The enrollees generally like these detachments because the forests generally feed better than the Army. They are not under as strict army rule such as standing retreat...keeping neat and clean, and making their beds, polishing their shoes etc. The camps that the detach crews maintain are not up to any army standard (CCC: Inspection: General: Flathead: Camp F-77, 19/3, RG 95, FRC).

Some Forest Service officials evidently did not maintain Army standards satisfactorily either, as evidenced by the following quote from a 1938 inspection of the Flathead Camp: "The Forestry employees are neat at the evening meal, but they should wear ties in consideration of the Army responsibility in requiring the enrollees to do so" (CCC: Inspection: General: Flathead: Camp F-77, 19/3, RG 95, FRC).

The first CCC camp on the Flathead National Forest was set up on the Desert Mountain Road in 1933 and was the only one in the Region occupied by a Montana CCC company. Ranger Tom Wiles of Coram Ranger District was the first superintendent of the "Citadel" camp. The 200-man camp worked on building a 12-mile road to Desert Mountain Lookout. Crews (often in spike camps) did trail maintenance, constructed buildings, and set up water systems, fences, and phone lines. In 1934 or 1935 the camp was moved to Elk Park on the South Fork (see Figure 133).

From this camp, named Bridgehead for the pack bridge they built, enrollees constructed the first west-side road on the South Fork, the Spotted Bear landing field, and other projects. The men wintered at Nine Mile and returned to the camp several summers (Shaw 1967: 135; Sharp 1988:25-26).



Figure 133. Elk Park (Bridgehead) CCC Camp (F-48), 1935 (courtesy of Flathead National Forest, Kalispell).

The large CCC camp northeast of Columbia Falls was built by CCC labor in the summer of 1938 on land obtained through an exchange with the Somers Lumber Company (see Figure 134). Company 952 moved into it from Elk Park in the fall of 1938. From then until it closed in April of 1942, it was the only year-round CCC work center on the Flathead National Forest. It generally had between 150 and 200 enrollees. They worked mostly in hazard reduction, felling and removing the large snags and windfalls on 127,000 acres left by the Half Moon fire of 1929. They also worked on a cooperative project with the Montana Fish and Game Department building a dam for a fish-rearing pond, and on development of the ski area on Big Mountain. In the summer, a few worked on road and phone line construction and maintenance and on other projects as needed. The camp was located so as to be in a good location to clean up the snags from the 1929 fire (the government had recently acquired about half the land burned by the fire through a land exchange with the J. Neils Company). The CCC crews felled the timber, built fire lines, and then burned the area and planted trees on it. Although New Yorkers originally lived at the camp, by the early 1940s a company from Pennsylvania had moved in (FNF, "Informational Report" 1939; 29 June 1933 memo, Flathead Inspection Reports Region One, RG 95, FRC; Sharp 1988:27; CCC: Supply: Camp Property: Buildings: Flathead, 9/6, RG 95, FRC; CCC: Plans: Camp Programs/Work Projects: Flathead, 40/4, RG 95, CCC).



Figure 134. Flathead CCC camp (F-77), located north of Columbia Falls, ca. 1944) (courtesy of Flathead National Forest, Kalispell).

In 1939, according to an inspection report, Flathead National Forest CCC enrollees worked mostly on hazard reduction and running a shingle mill operation. About 25 enrollees worked on phone maintenance in small crews. At Big Prairie men worked on the water system and the bunkhouse and maintained a fence; at Spotted Bear on the phone line and fencing; at Big Creek Ranger Station on various improvements; at Coram on farming at Tally Lake on road maintenance, and so on (29 November 1939 memo, Flathead Inspection Reports Region One, RG 95, FRC).

On the Tally Lake Ranger District, a 200-man seasonal CCC camp was located during the summers of 1933 and 1934 on a bench above Logan Creek. The men there, mostly from New York and New Jersey, built sections of the Logan Creek and Shepard Creek Roads, including several bridges. There was also a tent camp at Star Meadow that had a New York CCC company (F-5). A tent camp (F-6) was located at Red Meadow in the North Fork, also with enrollees from New York City. In 1933 Camp F-15 was a tent camp located at Coram Ranger Station (24FH64, FNF CR; Sharp 1988:5).

The men at the CCC camp at Big Creek Ranger Station built many of the improvements there in 1936, including the barn, fence, mangers, water trough and pipe line, shop/garage, dwelling and administration building, and general grounds improvement including the lawn and flagstone walks. They also worked on hazard reduction and fuelwood cutting. The "rustic architecture" of the Depression-era Forest Service buildings and structures represent a design philosophy aimed at non-intrusive expression, the use of natural and native materials, and labor-intensive building methods. The rustic style grew out of the 19th century romanticism about nature and the western

frontier. Textural richness was achieved by juxtaposing materials and shapes (Throop:3, 31; Foltz 1937:25-26).

The CCC program allowed engineering in the Forest Service to take on a greater role. Because of the Depression, many engineers were available to help with CCC projects. The Forest Service developed a system for designing and building "truck trails" for fire protection, including the contour method of road staking (USDA FS "History of Engineering" 1990:5).

Some CCC enrollees on the Flathead National Forest were injured or killed while in the CCC. One Columbia Falls enrollee was killed when struck by a falling snag on a fire, and one drowned in the South Fork and another in the North Fork (Shaw 1967:98).

Glacier National Park had almost 1,300 CCC enrollees assigned to it between 1933 and 1941. In the Apgar area they worked on removing snags from the 1929 fire, graded roads, built trails, fought fires, and cleared campsites. A sawmill in Apgar produced lumber, fence posts, and phone poles (Ober 1976:30, 34-35).

When the CCC program ended in 1941, the various CCC camp buildings on the Flathead National Forest were either salvaged for rough lumber or declared surplus. Red Meadow (F-6), for example, was salvaged and the material given to the Forest Service in 1934. It consisted of a log recreation hall, a frame mess hall, a frame officers' bath and latrine, a frame latrine, and a frame shower and wash building. With the start of World War II, Camp F-77, Flathead Camp, was considered for the use of conscientious objectors or student fire crews but was rejected because of the cost of snow removal (CCC: Supply: Camp Property: Buildings: Flathead, 9/6, RG 95, FRC).

Blister Rust

The fungus known as blister rust came to America from Europe in 1909 in a shipment of nursery stock. It requires two hosts for survival: gooseberries or currants (*Ribes* plants), and white or sugar pine, and it almost always kills the latter. By 1923 blister rust was infecting trees in northern Idaho. The first blister rust camp was established there in 1924, and soon many more were set up to remove *Ribes* plants. Between 1933 and 1941 as many as 12,000 people worked on blister rust crews in the national forests (Guth 1991:32-33).

In northwestern Montana, western white pine, limber pine, and whitebark pine are affected by blister rust (Benedict 1981:23). The Flathead National Forest, however, lay on the eastern edge of the area included in the blister rust control program, so CCC and other crews on the Forest were not used to pull *Ribes* plants.

During World War II, emergency programs did not operate and the blister rust infection spread. Only the highest priority areas were treated. In 1948 a Forest Service study determined that the rust could be controlled, and the attempt to eradicate host *Ribes* plants continued. Fungicides were used beginning in 1957, but by the mid-1960s these sprayings were shown to be ineffective; control was being achieved by natural factors. In 1967, the blister rust control program in the northern Rockies officially ended (Benedict 1981:40-42).

RECREATION AND WILDERNESS AREAS

Introduction

Pioneers in America, with few exceptions, regarded wilderness with "defiant hatred," and they battled the wilderness in the name of their nation, race, and God. Early Americans defined "progress" as the conquering of wilderness, the disappearance of wild country. By the late 19th century, in contrast, many Americans appreciated the aesthetic and recreational aspects of nature (Nash 1982:24, 40; Tweed 1980:1).

Some early outdoor clubs were established in the 1800s, such as the Sierra Club in 1873 and the Mazama Club in 1894. Even so, the possibility of forest recreation remained remote to the general population in the 1880s. At the turn of the century, the outdoor movement appealed primarily to city people. Wealthy people, intellectuals, and those with the leisure time and the money to travel were the only Americans able to visit natural wonders like Yosemite or Yellowstone or to hunt big game in the West. In general, nineteenth-century resorts developed around mineral springs, scenic curiosities, mountains, or seashores. Resort hotels were generally built for the upper class by railroad and steamship interests (Nash 1982:153; Ellison 1942:630; Jakle:53, 60).

The center of recreation in the Flathead Valley in the 1890s was Lake McDonald, which between 1897 and 1910 was administered by the GLO and then the Forest Service. Recreationists soon discovered the attractions of the South Fork, although that area required time (and usually pack animals) for a successful visit. The sport of downhill skiing had captivated some local enthusiasts by the late 1930s, and Big Mountain was developed in the 1940s on Flathead National Forest land. As the popular demand for recreation boomed after World War II, so did the recreational use of the national forests, and road construction improved access within the Forests.

General Recreation

Early outdoor recreation in the Flathead Valley focussed on resource-oriented activities such as hunting, fishing, huckleberrying, and some mountain climbing. As the transportation system improved, more remote areas became popular. For example, in 1900 a local newspaper commented that Tally Lake, which had been almost unknown until then, "is this year coming in to favor as a fishing and pleasure resort" (*Flathead Monitor* 11 May 1900). Some early settlers, particularly those with property on lakeshores, built tourist accommodations and thus supplemented their income seasonally. Charles Ramsey, for example, constructed a rooming house near his cabin on Whitefish Lake by 1891 to attract hunters and fishermen (this eventually also housed railroad workers, surveyors, and construction workers). In 1892 Ramsey's "fine summer resort" featured housekeeping apartments, a dining room and kitchen, and row boats (Schafer 1973:11; *Inter Lake* 4 March 1892).

Car camping was cheaper than using motels and restaurants, and it offered freedom of action and ways to get close to nature relatively easily. As the popularity of car camping increased after

World War I, campgrounds were established to control and direct the crowds (see Figure 135). Campgrounds became more and more luxurious. In the 1920s many towns provided free municipal campgrounds, but by 1930 private campgrounds had taken over and fees were charged at city campgrounds to keep out poor people. Cabin camps, the forerunner of motels, became more and more popular and were built throughout the country (Jakle: 152, 160, 163).



Figure 135. Auto camping in western Montana, ca. 1920 (courtesy of the Mansfield Library, University of Montana, Missoula).

Tourist camps catered to Flathead Valley residents and out-of-town visitors. Camp Tuffit and Babcock's, for example, had cabins for rent by the day, week or month on Lake Mary Ronan (see

Figure 136). The camps offered meals, rowboats, and free camping (Tuffit even had rough bunks filled with hay for beds). Their patrons came from not only Missoula and Kalispell but also from various eastern states. In 1924, the Forest Service considered giving slide programs to guests at the camps (14 August 1924 memo, Flathead Inspection Reports Region One, RG 95, FRC).



Dude ranching in the United States expanded briefly after World War II but has declined since. The concept originated with Howard Eaton and his brothers, who began charging eastern visitors to stay at their ranch in North Dakota. Outfitter and guide Dick Randall established the industry in Montana. He began taking paying customers at his ranch near Gardiner in 1905. When the Dude Ranchers Association was formed in 1925, about 50 people attended from Montana and Wyoming. The industry boomed through the 1930s (there were 38 Montana members in 1937). In many cases, the dude business kept cattle operations from going under during the Depression (Sullivan 1971:4, 11, 13-15, 17).

Some forest homesteaders had well-established businesses guiding and outfitting and serving as dude ranches for visitors. Matt Brill and his wife started a guest ranch at their place in the North Fork in approximately 1920, taking guests on pack trips. By 1931 the Brills had created a complex there that included guest cabins, a lodge, a garage, a cookhouse, a chicken coop, a washroom/laundry facility, a barn, and so on. The site served as a guest ranch until approximately 1950. The clientele here, as at most other dude ranches, was mostly out-of-state wealthy families that returned year after year. They fished, hunted, picked berries, and relaxed (24FH105, FNF CR; L. Wilson 1988).

Other guest ranches and lodges located in the Flathead National Forest area included the Holland Lake Lodge (the original one was built in the early 1920s), a lodge built in 1927 at the foot of Lindbergh Lake, and the Diamond R Ranch at Spotted Bear (see Figure 137). The Ridenours established tourist cabins in the early 1920s on Lake Five, along the Belton Stage Road. By 1928 Flathead County had at least 16 dude ranches offering their facilities to tourists (Wolff 1980:55; Sztaray-Kountz Planning 1994:12; McKay 1993:15).



Figure 137. Boaters on Holland Lake, 1936 (photo by K. D. Swan, courtesy of USDA Forest Service, Region One, Missoula).

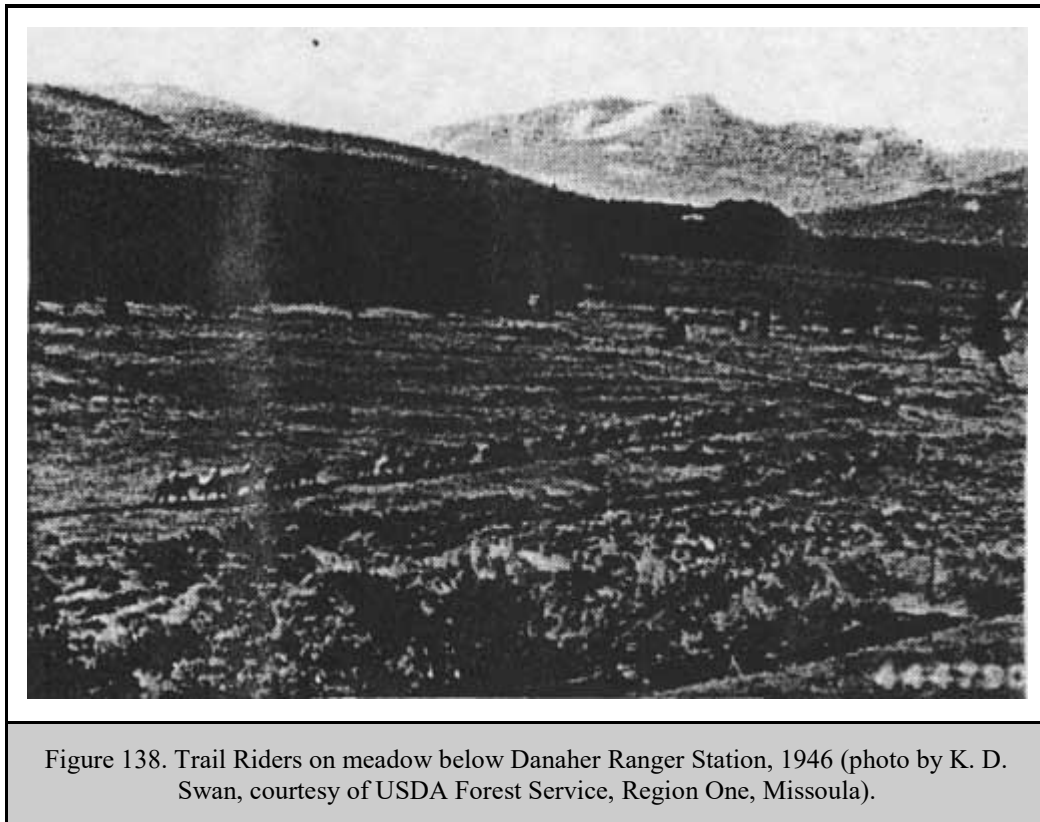
In 1917 well-known author Mary Roberts Rinehart and her family traveled with a large group up the east side of the North Fork, floating back down in a boat. This was a trip in the grand old style. As Rinehart herself put it, a Camas Creek homesteader watched them go by, staring "at our thirty-one horses, sixteen of them packed with things he had learned to live without." Although she wrote about being in the "wilderness," some of her party stopped at the Polebridge Mercantile and bought eggs, cheese, and a wooden pail containing 19 pounds of chocolate chips (Rinehart 1918:29, 77).

In the 1910s outfitters began taking "dudes" into the South Fork. Joe Murphy of Ovando started an outfitting business into the South Fork in approximately 1919, generally guiding wealthy hunters from the East. He built log cabins and a lodge in the area now known as Murphy Flats. There were no restrictions then; on some trips he had nearly 100 horses and mules. His permit ended in 1937 (Shaw 1967:28; Merriam 1966:23).

The very wealthy sometimes created their own private resorts at desirable locations, some of them under Forest Service special-use permits. A Denver attorney had a permit on Morrison

Creek, where he built a summer home in the early 1920s. Cornelius (Con) Kelley, president and then chairman of the board of the ACM from 1918-55, and Lewis Orvis Evans (also an ACM man) were partners in an estate located on Swan Lake. Evans discovered the area while on a fishing trip and bought a small cabin there in 1908. Eventually they owned as much as 7,000 acres. Most of the building at their estate was done in the 1920s; the complex grew to include 31 buildings. Visitors were usually ACM officials and business associates from Butte and New York City. They hosted huge formal parties and often employed over 20 servants at one time (Shaw 1967:27; Pepe 1971:24-25; 24LA18, FNF CR).

Some guided trips in the Flathead were arranged by private organizations. For example, for a number of years the Trail Riders of the Wilderness offered annual trips in the South Fork of the Flathead and the Sun River, sponsored by the American Forestry Association (see Figure 138) (R1 PR 797, 27 May 1937). Visitors on these and other trips helped publicize the Flathead National Forest.



Recreation in the Lake McDonald Area

The main area of attraction for recreational visitors within the Flathead Valley for many years was Lake McDonald (earlier called Terry Lake), located within the Flathead Forest Reserve/Blackfoot National Forest from 1897 until 1910 and since then within Glacier National Park. The lake area was well-publicized in the 1890s, although visitation was quite low at first (Buchholtz 1976a:46).

Homesteaders were filing claims to the land around Lake McDonald by 1892. The first hotel in Belton was built in 1892-93 near the railroad depot. In 1895 George Snyder built a hotel near the head of the lake, and Frank Geduhn began building summer cabins at the head of the lake. Until 1910 local residents provided most of the visitor housing, mostly cabins to rent to summer tourists or friends from the Flathead. Many of the names of natural features in the area were named after these early settlers or summer visitors, such as Snyder Ridge, Howe Ridge, and Mount Vaught. Stanton Mountain was named for Lottie Stanton, the wife of a livery stable keeper at Demersville (Ober 1973:13, 16-19; Vaught Papers 1/R).

Hunting and fishing expeditions were being guided on the east side of what is now Glacier National Park by the 1880s. The early tourists were wealthy people, including scientists such as George Bird Grinnell. In 1894 professor Lyman Sperry came to Lake McDonald looking for glaciers, encouraged by the general passenger agent of the Great Northern Railway, who saw glaciers as an attraction to rail passengers. The GNR appropriated money to help Sperry have some horse trails built in the Lake McDonald area.

By the late 1890s Lake McDonald had places to stay, guided horse and mountain-climbing trips, and a steamer that plied the lake. The hotel proprietors there favored small-scale service and remained stubbornly independent from the railroad (Buchholtz 1976a:31, 39; Ober 1973:13).

Some of the early visitors to the Lake McDonald area climbed mountains or walked on glaciers with the help of local guides. Others had unusual adventures. For example, Frank Miles of Kalispell led a group of people in three boats on the Middle Fork. They reportedly "sometimes shot like a fish" through canyons and over rapids, fished at Lake McDonald, and eventually floated on to Demersville (Johns 1943:VII, 127).

Although publicly promoted as early as the 1880s, the designation of Glacier National Park had to wait until mining interests in the area proved a failure. The Great Northern Railway, chambers of commerce, and various outdoorsmen and scientists promoted the creation of the Park. The first bill to create the Park was introduced in 1907. The final bill of 1910 contained numerous provisions protecting special users; in reality, it was more like a modified national forest. Nevertheless, the creation of Glacier National Park fulfilled the ideals of wilderness preservation, recreational land, scientific laboratory, and nationalistic symbol (Buchholtz 1976a:47, 49).

When Lake McDonald was under GLO and then Forest Service jurisdiction, potential settlers had to obtain a permit from the government to build cabins. For example, in 1900 L. O. Vaught, an Illinois attorney, obtained permission to build a cabin on the lake for private use by himself and friends during the summer months. A Forest officer had to supervise the location and designate where the timber, stone, and other building materials were to be obtained (see Figure 139) (Vaught papers 2/F).



Figure 139. Belton (West Glacier) seen from the south, ca. 1914 (R. E. Marble Collection, courtesy of Glacier National Park, West Glacier).

In 1899 Flathead Forest Reserve ranger L. C. Hoffius wrote a series of letters to Lyman Sperry informing him of the situation in the Lake McDonald area. He built a trail that year from the foot of the lake to Hotel Glacier, worked on other trails, and patrolled for fire. He commented, "Will do all I can to keep the trails in good order for tourists. Also will endeavor to open up new country for tourists" (Vaught Papers 3/C).

The first superintendent of the Park, William Logan, planned for the new Park to be opened and used. He insured the protection of private landowners' rights, encouraged the investigation of existing mining claims to determine their validity, established a sawmill, and encouraged major construction projects. Logan and many others managing national parks at that time saw national parks as playgrounds meant for the enjoyment of the public. As Stephen Mather, head of the National Park Service, later put it, "Scenery is a hollow enjoyment if the tourist starts out after an indigestible breakfast and a fitful sleep on an impossible bed" (Buchholtz 1976a:53).

From June-October 1911, approximately 4,000 visitors entered Glacier National Park, most coming through Belton. The road from Belton to the lake was greatly improved in 1910, encouraging more tourists to visit the area. By the end of 1911 there were 199 miles of trail in fair condition in the new Park, 50 miles of which were completely new. The railroad soon built the chalet complex at Belton and planned hotels, tent camps, roads, trails, and chalets for the east side (Logan 1911:8-9; Buchholtz 1976a:56). In 1914 John Lewis' hotel on Lake McDonald (now known as the Lake McDonald Lodge) opened for visitors, and visitation to the Park gradually rose (see Figure 140).

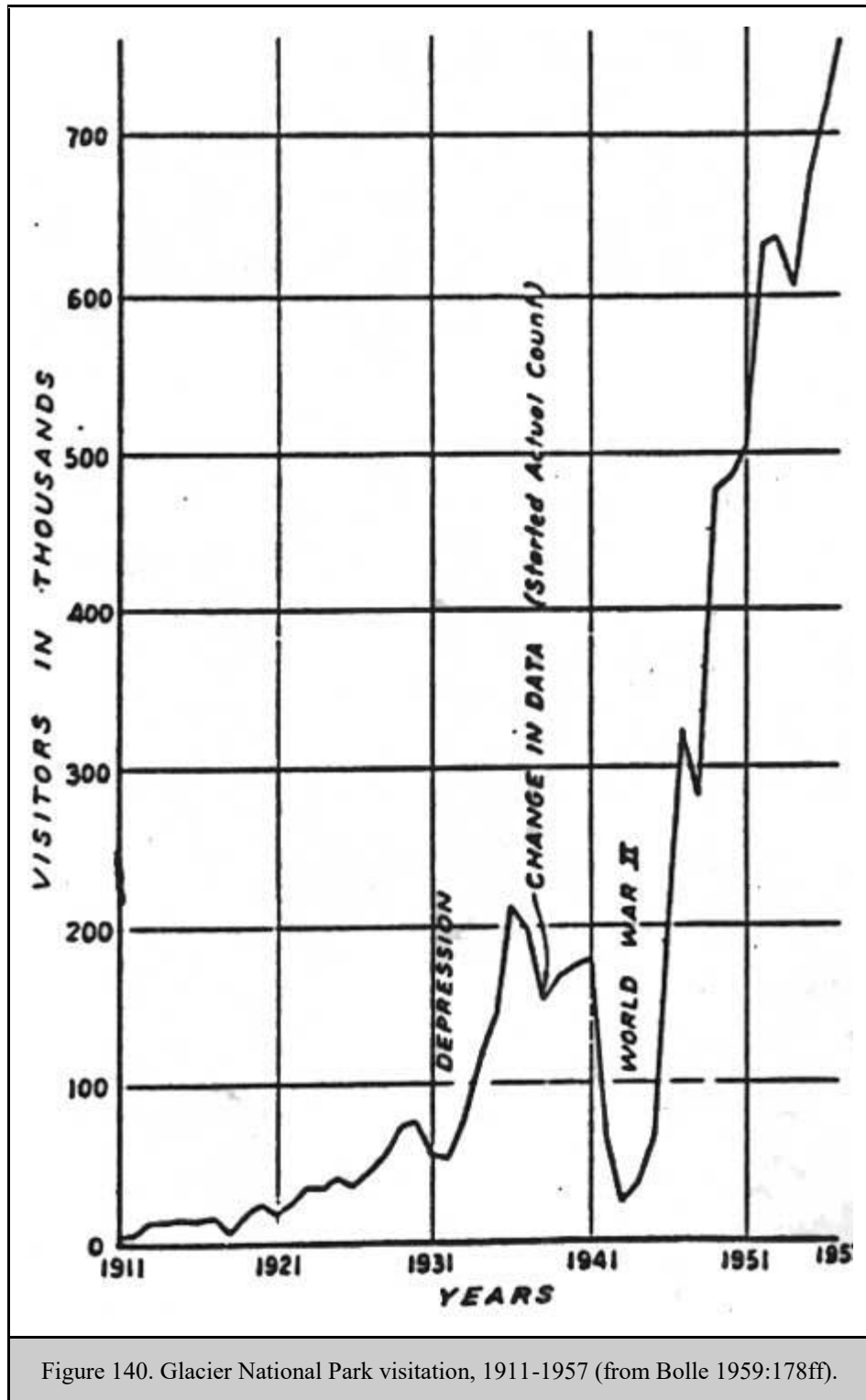


Figure 140. Glacier National Park visitation, 1911-1957 (from Bolle 1959:178ff).

The efforts of the Forest Service and then of the National Park Service to develop Lake McDonald were slow indeed compared to those of the Great Northern, largely because of extremely low budgets. As ranger/homesteader/outfitter Frank Geduhn commented in 1912,

"The Gov'ts doing here seem in comparison [with the railroad] like the efforts of a tenderfoot, I should say an imbecile" (Vaught Papers 2/E).

Flathead National Forest Recreation up to World War II

GLO regulations issued in 1902 permitted recreational use of the forest reserves in the form of building and maintaining sanitariums and hotels, camping, and travel for pleasure. In 1905, summer residences were added to the list. The 1907 Forest Service Use Book referred to national forests as "great playgrounds for the people" (Tweed: 1-2; Pinchot 1907:24). Even so, early recreation management was largely incidental to the other work of the forest rangers and guards.

Forest Service recreation policy grew out of its desire to prevent the creation of a separate parks bureau in the Department of the Interior. In 1909, according to agency figures, over 400,000 people recreated on national forests. After the National Park Service was created in 1916, the Forest Service went on the defensive (Robbins 1976:110; *Kalispell Bee*, 26 August 1910).

Recreational use of the national forests gave political support for Forest development and helped keep the National Park Service from being the only agency managing land for recreation. Early Forest Service recreation plans aimed at preserving scenery. In 1917, Forest Service Chief Henry S. Graves wrote that the Forest Service did not intend to protect the national forests "for a few wealthy persons who can afford to take long trips on the railroad, buy expensive pack outfits, and so on. We have a very practical problem of opening up and making available the public properties for as wide a use as possible by people of little means as well as by those better-to-do" (Graves 1917:134).

The National Park Service was created in 1916 over Forest Service protest. The next year, the Forest Service began an intensive study of its recreation facilities, commissioning a landscape architect to survey the Forests for their recreation potential. The landscape architect recommended continuing national forest recreation development separate from the national parks and hiring professional landscape architects. As soon as World War I ended the Forest Service hired its first landscape architect, Arthur Carhart, to work in the Rocky Mountain District. This was followed in 1924 by the start of the National Conference on Outdoor Recreation, which initiated recreation planning on all federal lands. In the 1920s and 1930s the Forest Service shifted to wilderness concerns, due to pressures from the public and industry and agency employees and to competition with the National Park Service for recreational budgets and land (Steen 1976:12; Tweed 1980:6-7; Baker et al. 1993:202; Roth 1984:113).

In the 1920s, the Forest Service sought to prevent the loss of large areas to the National Park Service, which was trying to preserve areas of outstanding beauty, many of them within the nation's national forests. The Forest Service moved towards a policy of wilderness preservation as a result. When Forest Service chief Ferdinand A. Silcox proclaimed in 1935 that the national forests must be managed by the principle of multiple use, he was not stating a new policy; he was presenting an argument that would prevent recreational lands from being transferred to the National Park Service. Although the Forest Service said it could manage timber and recreation together, the first purpose of the national forests was still to harvest timber. Sustained yield was

the management prescription wherever there was timber, and multiple use wherever there was no timber (Swain 1963:21; Clary 1986:100-101).

Federal funding for recreation on the national forests remained very low in the 1920s. The first appropriation for Forest Service recreation was in 1923 (\$10,000 earmarked for sanitation). Money was provided to build toilets, fireplaces, and so on, based on fire prevention and sanitation rather than recreational needs. In 1925 the national forests around the country had about 1,500 campgrounds, 1/3 with facilities of some sort. The Depression slowed funding even further (G. Robinson 1975:121; Tweed 1980:11-13, 15).

In the 1910s the Forest Service generally looked upon campers and picnickers with disfavor - they increased the fire hazard - but favored summer home permittees, who helped with fire control and brought in needed revenue. Beginning in 1920, the agency shifted to giving camping and picnicking priority over cottages. Designated camping and picnic areas were first established to minimize fire hazard and stream pollution rather than to serve the public (Ellison 1942:635-636).

The first Forest Service developed campground was built in 1916 on the Oregon National Forest. It offered camp tables, toilets, a check-in station, a ranger station, and a scenic trail. One of the benefits of issuing camping permits, as had been discussed even in the early 1900s, was that it provided a way to alert campers to the possibility of their starting fires by being careless with their campfires (Tweed:4; letter to District Forester, 16 February 1911, 1300 Management - Historical, Material Relating to District One Activities, RO).

The first Forest Service campground on land that is now in the Flathead National Forest was approved in 1922. The campground covered 33 acres and was located about 2 miles north of Coal Creek in the North Fork. The 1922 justification commented that more and more people were using the North Fork for recreation every year, and that the Forest Service needed to reserve tracts just for that use. In 1922, a regional official suggested a survey of the recreational possibilities and requirements in the area, noting that other sites might be desirable to reserve as well. In 1925, however, approval of that campground was cancelled because of high water in the area (FNF Lands).

From the CCC era until the building of access roads for the spruce salvage program, the main use of the North Fork was recreational. The CCC built three campgrounds there: Big Creek 1, Big Creek 2, and Tuchuck (Bolle 1959:200).

In 1932, public campgrounds were located at Fielding and Elbow (Lindbergh) Lake. The Elbow Lake camp had tables, stoves, latrines and garbage pits built that year. In 1939 the Flathead National Forest had a developed campground at Beardance on Flathead Lake that featured stoves, tables, and spring water. By the late 1930s there were also campgrounds at Hungry Horse Creek with stoves, tables, and outhouses, and at Felix Creek and Elk Park (3 August 1932 memo, Flathead Inspection Reports Region One, RO; Work Projects Administration 1939:241-42).

In 1925 the Flathead National Forest withdrew land in the Nyack area for a public campground for travellers on the highway being built through the area. Mentioned in the request was a rumor

that Nyack would some day become an entrance to Glacier National Park. In 1930, a report on the Essex area commented that there were about 300 man-days of recreational use in the Marion Lake area (a good fishing lake). The report called the area "unattractive" (because of large fires in the area) but commented that the new highway was bringing an end to its seclusion (FNF Lands; 28 January 1930, "Report on Municipal Watershed," in 2510 Surveys, Watershed Analyses, 1927-29, RO).

Another 1920s campground tied to new road construction was located north of Elk Park on the east side of the South Fork. According to the Flathead National Forest, the area had "always been used by campers. New road will make it very popular. Is a beautiful spot and only one desirable along river on road for 14 miles north and 15 miles south. It is planned to set aside a Public Service site here." By 1927, the South Fork was being used more and more by tourists as a side trip from Glacier National Park (FNF Lands; 17 August 1927 memo, Flathead Inspection Reports Region One, 1920-1923 Inspection Reports, RO). Almost all of the recreationists on the Flathead National Forest arrived by car (see Figure 141).

Type of Use	Flathead National Forest	Blackfeet National Forest
total number visitors	25,000	9,600
special-use permittees and guests	100	50
hotel and resort guests	1,300	450
campers	2,200	900
picnickers	6,700	4,200
transient tourists	14,700	4,000
Mode of Travel		
automobile	23,500	9,200
railroad	100	100
hikers	200	200

Figure 141. Recreational use on Flathead and Blackfeet National Forests, 1930 (*Northern Region News* (10 March 1931):14).

Beginning in 1933, funding for recreation on the national forests increased tremendously through various New Deal programs. Under the CCC, the recreation program broadened to include bathhouses, shelters, amphitheaters, and playgrounds. Recreation facilities built by the CCC for the Forest Service had to be inexpensive and simple. In 1934, each Region was authorized to hire technical personnel to oversee recreation improvements. In the late 1930s Bob Marshall, as Chief of the Division of Recreation and Lands, helped bring stronger central guidance and review, but facilities were not standardized until the late 1950s (Tweed 1980: 16-18, 20-21, 24).

According to a 1938 handbook, Forest Service managers felt that their job was to make outdoors recreation more accessible to the public with the least possible evidence of disturbance. It recommended that camps be well screened from the highway and that man-made improvements be screened by trees or shrubbery, that they be located at or near a natural attraction, make

provisions for trailer use, and provide a small supply of tent poles (USDA FS, "Campground Improvement" 1935:1, 3-4, 30).

Approximately 65,000 visitors a year were using the national forests of the four northwestern Montana counties for recreation in the late 1930s. Most of the national forest visitors during the Depression lived in towns adjacent to the Forests; they had free time but little money to travel far. Campgrounds reached by roads were heavily used on weekends by townspeople and area farmers. In 1935 30% of the visitors fished, 25% enjoyed rest and relaxation, and 9% hunted. Eighty-one per cent preferred developed campsites with tables and stoves. At that time, 62% of the Region One visitors used tents, 1.3% house trailers, and 17% auto trailers. Most people expressed a desire not to have organized camps like those in the national parks (Sundborg 1945:64; Clark 1936:840-843; Wiles 1936:16).

By 1936 the national forests of Region One recognized the damage to meadows near campgrounds due to overgrazing. In the 1930s, 50 head of stock in one dude outfit was not unusual, some of them staying as long as a week in one place. Because of the damage, commercial packers and dude ranchers were required to tell rangers of their plans and routes and to limit stock use at any one feeding area to five days. By the 1930s the Flathead National Forest was collecting damages from campers who left their camps in poor condition. For instance, in 1932 the Forest Service billed a hunter for the cost of cleaning up his camp (3 August 1932 memo, Flathead Inspection Reports Region One, RO; Inspection Reports, Region One, 1937-, RG 95, FRC; R1 PR 703, 31 March 1936).

Downhill Skiing

The new sport of downhill skiing caught on in the United States in the mid-1930s, and most of the country's early ski areas were established on Forest Service land. The first winter sport area on a national forest was built in 1936 at Sun Valley, Idaho. The Forest Service generally relied on private initiative for developing ski areas (Guth 1991:181; G. Robinson 1975:126).

In the Flathead, ski parties first used Big Mountain slopes in 1935. The members of the Whitefish Hell-Roaring Ski Club built a cabin to house skiers. In 1938 members of the club persuaded J. C. Urquhart, supervisor of the Flathead National Forest, to build a two-mile road to the cabin. The Forest Service road officially opened in November 1939, with a 600' tow, and the Great Northern Railway began advertising the mountain. After World War II, veterans trained in skiing returned to the United States and skied recreationally. In 1947 Winter Sports, Inc., was incorporated and the clearing of slopes and lifts and lodge sites began. The new chalet was built in 1949, and the old cabins were burned in 1950 as fire hazards. The Big Mountain chairlift began serving summer visitors as well as winter visitors in 1951. In that first season of 1947-48, Big Mountain had 6,900 visitors. Twenty-four years later, visitation had grown to 218,400 (Shaw 1967:30; Schafer 1973:159-166; Sundborg 1945:65).

Nearly all the early ski trails and about 3/4 of the lifts at Big Mountain were located on national forest land. The runways were cleared by timber sales. The Forest Service worked together with Winter Sports, Inc., to select trail locations and to establish rules for use of the area, safety precautions, and lift charges (Montana Conservation Council 1954:54).

A small ski area was operated on national forest land just outside of Belton. It had opened by 1941. In 1959, Ed Nordtome was operating the Silver Buckle Ski course about three miles south of Kalispell with a small ski tow. A family near Creston had a commercial ski slope with a tow rope for a few years in the 1950s (Guth 1991:181; 5340 Exchange, FNF Lands file; Elwood 1994).

Flathead National Forest Recreation After World War II

When World War II began in 1941, public works recreation allotments ended, but half the Regions retained a professional recreation planner through the war period. After World War II, pent-up buying power and increased leisure time led to the flooding of United States highways with vacationers. Many resorts had been closed during the war because gas and tire rationing had limited traveling for pleasure. After the war, workers had shorter work weeks and longer vacations (Tweed 1980:26; Jakle 1985:185).

Between 1944 and 1956, recreational use of Forest Service lands in Region One increased tenfold, largely due to out-of-state vacationers. The Forest Service was largely unprepared for this enormous public demand for recreation; recreation planning and plans for the repair or expansion of facilities had been eliminated during the war. Visitation to Glacier National Park also increased dramatically, reaching half a million by 1951 (3 October 1956, 1380 Reports - Historical - Reports to the Chief, RO; Buchholtz 1976a:72; Baker et al. 1993:164, 214).

On the Flathead National Forest, recreational use climbed dramatically in the 1940s and 1950s. In 1947 the Forest recorded 40,078 recreational visitor-days. This had reached 258,000 by 1958. In 1952, for example, the Tally Lake ranger district was reporting "constant use" of the Big Mountain ski area, the Tally Lake campground, and Martin Creek Falls (Merriam 1966:77; Ibenthal 1952).

In 1949 the Forest Service was authorized to establish fee camping areas operated by private people or by the agency. Soon, larger and more luxurious accommodations appeared. Private operations generally featured motor inns instead of tourist courts (Baker et al. 1993:207; Jalde 1985:198).

The flooding of Hungry Horse Reservoir in the early 1950s replaced a high-quality trout stream with a reservoir with fluctuating levels "and dubious recreational shoreline values," according to a Flathead National Forest report. Nevertheless, the Forest Service felt that the reservoir would lead to greatly increased use of the area. At that time, annual use was approximately 7,400 (most fishermen, hunters, and campers in that order). In 1948 there were six partially developed campgrounds in the area. Forest Service officials projected needing 15-20 campgrounds to accommodate 75 family units total, plus several picnic grounds and public boat landings and swimming areas. The first summer homesites were leased in the Hungry Horse Reservoir area in 1956. By 1958, Hungry Horse had two campgrounds, Lost Johnny and Lakeview, each with four units. In 1959, there were 14 summer homesites under special-use permit on the ranger district (USDA FS "A Study" 1948:31-32; *Great Falls Tribune* 20 November 1955:9; Arvidson 1967; "Comparison of the Major Volume of Business," HHRD).

In the late 1950s, the Forest Service and the National Park Service began major competitive planning efforts, recognizing the greatly increasing demand for outdoor recreation. In 1957 the Forest Service established Operation Outdoors, a national program to provide recreation opportunities throughout the national forests. Each Forest developed recreation plans for the next 5 years under the program. In 1959 the Forest Service also initiated a recreation survey designed to examine the needs expected by the year 2000 (G. Robinson 1975:15, 121; Baker et al. 1993:214-215). This planning movement was similar to the National Park Service's Mission 66, a 10-year program to develop recreational facilities.

As transportation facilities improved in the area, recreational use increased. The completion of the Swan Valley Forest Highway in the late 1950s, for example, created a "boom in recreation use" in the Swan Valley (FNF "Timber Management, Swan" 1960:16).

Recreational use also increased greatly in the Coram area after the completion of the Hungry Horse dam. Between 1952 and 1960 recreation visits increased nearly 5 times in the Coram Working Circle. On other working circles it was less: from 1955-60 recreation on the Kalispell Working Circle went up 9% yearly. Recreational visits to the Glacier View Ranger District in 1958 were estimated at 56,500 (FNF "Timber Management, Coram" 1961:15; FNF "Timber Management, Kalispell" 1961:22; FNF "Timber Management, Glacier View" 1959:21).

Forest Service campgrounds were typically less developed and had fewer campsites than those in the national parks. In 1958 the Flathead National Forest had 70 campsites available, whereas Glacier National Park had the same number of campgrounds but 581 sites. In 1961, the Flathead National Forest maintained 16 developed campgrounds (the largest had 23 tables), 6 boat launching sites, and 5 commercial public service recreation resorts under special use permits (Peters 1958:95; "Areas" 1961:E5).

Creation of Primitive and Wilderness Areas

Yellowstone National Park was created in 1872, the first example in the United States of large scale wilderness preservation in the public interest. Automobiles and the building of a national highway system, the "See America First" campaign, the conservation movement, and the advertisement of national parks as the people's playground all led to increasing outdoor recreation in America. By about 1920 many people felt that the country was being criss-crossed by a network of roads; the first wilderness areas were created at this time (Nash 1982:108; Ellison 1942:632, 634).

As recreation became more and more a recognized forest product, the national forests began surveying their recreational potential. The first deliberate commitment of national forest land to wilderness was in 1919, when Trappers Lake in Colorado was protected from development. In 1924 the Forest Service designated 574,000 acres of the Gila National Forest as roadless area devoted to wilderness recreation. This was policy, not law, and few commercial activities were actually prohibited (Nash 1984:6-8).

In the 1920s the Forest Service lacked a definite policy for the undeveloped areas that it managed. The agency was unwilling to make irreversible decisions that would prevent future

generations from using needed resources. In 1929 the agency defined primitive areas as places that would provide the "nature lover and student of history a representation of conditions typical of the pioneer period" (Steen 1976:156).

The 1929 "L-20 Regulations" covered national forest primitive areas. The regulations suggested limitations on unplanned development in untouched areas, but they allowed regulated use of timber, forage, or water resources. These regulations served to discourage field personnel from initiating unnecessary development and to slow the transfer of more land to the National Park Service (most national parks since 1916 had been carved out of Forest Service land) (Roth 1984:115; Merriam 1989:82).

The U Regulations supplanted the L-20 Regulations and were implemented in 1939. These regulations gave much greater protection to wilderness areas. They prohibited logging, road construction, and special-use permits for hotels, stores, resorts, summer homes, organization camps, and hunting and fishing camps. Most motorboat and aircraft use was prohibited. Livestock grazing, however, was permitted because of political pressure, as were improvements necessary for fire protection. The areas were also still subject to existing mining and leasing laws and to the possibility of reservoir and dam construction, again in response to the protests of commercial users of national forest lands. The wilderness areas created by the Forest Service such as the Bob Marshall Wilderness appealed to a new clientele, out-of-state visitors, not the usual national forest users (Roth 1984:116; Merriam 1966:113).

The rising importance placed on amenity values in the American conservation movement after World War II increased the importance of aesthetic considerations associated with quality of life. The federal wilderness bill was debated and rewritten for a number of years until its passage in 1964 (Nash 1984:8-10).

Bob Marshall Wilderness

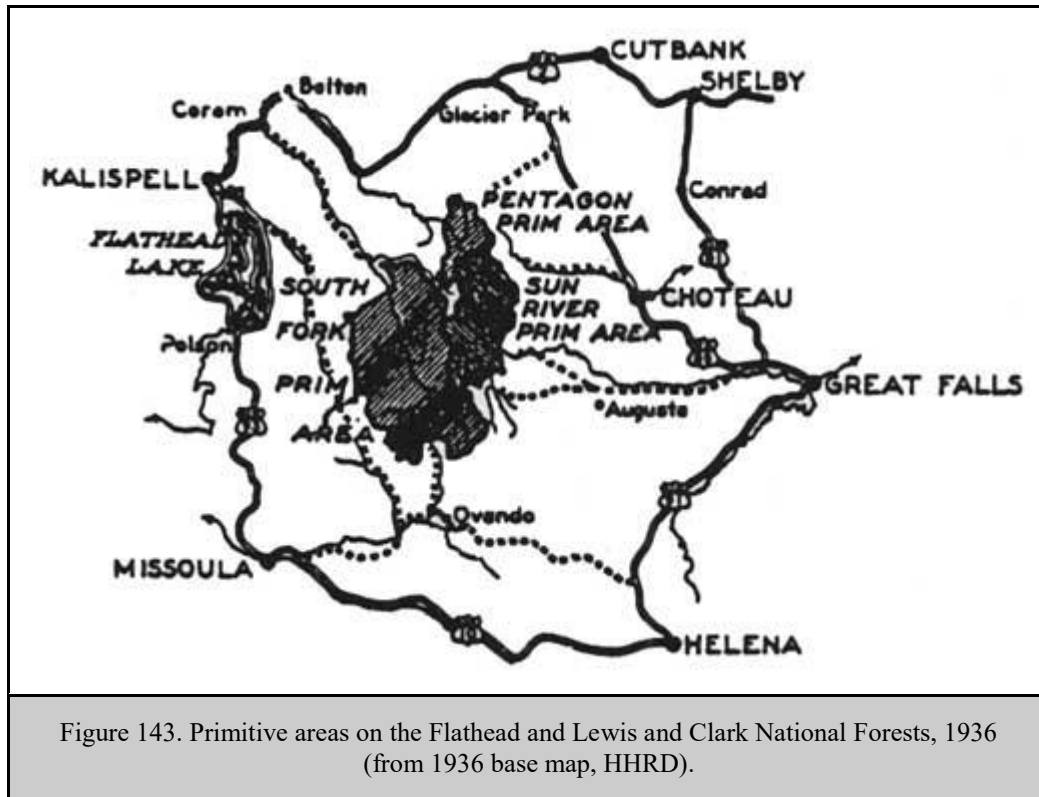
In 1917, the Chicago, Milwaukee & St. Paul Railroad was considering promoting the Swan and the head of the South Fork of the Flathead as a potential national park. Regional forester Silcox met with railroad officials to persuade them that recreational development under national forest regulations had distinct advantages and included such activities as pack trips, camping, and boating (10 May 1917, 1380 Reports - Historical - District 1, RO). The two areas remained under Forest Service jurisdiction.

Much of the South Fork had not been explored much by recreationists by 1920. That year, K. D. Swan and a companion traveled from Holland Lake over Gordon Pass to Big Prairie, to Big Salmon Lake (which they called "far off the main lines of travel") and out by the Monture trail to Ovando (see Figure 142). The only recreationists they saw on the trip was a honeymooning couple camping at the mouth of Salmon Creek (Swan 1921:245, 247).



Figure 142. View southwest across Big Salmon Lake from the outlet, 1934 (photo by K. D. Swan, courtesy of USDA Forest Service, Missoula).

The Flathead National Forest did designate "primitive areas," however. The Forest Service established the South Fork Primitive Area in 1931 (see Figure 143). It included about 584,000 acres in the South Fork, White River, and tributaries of the Spotted Bear drainages. Citing considerable public support for the designation, the Forest Service commented that the timber in the area was commercially inaccessible for at least 30 years, that the area was not important as a water source for power or irrigation, and that there were no permanent mining claims inside the boundaries. Administrative issues included private lands within the wilderness: 69,000 acres owned by the Northern Pacific Railroad and tracts owned by two individuals. The Forest Service acquired the railroad land between 1950 and 1955 and the private tracts in 1935 and 1940. Missoula attorney Howard Toole and others outside the agency actively pushed for the land exchange through political channels in order to save the South Fork for recreational purposes (Merriam 1966:26-27; FNF Lands).



Two years later, in 1933, the Forest Service designated the Pentagon Primitive Area. At first this 95,000-acre region did not include a strip along the headwaters of the Spotted Bear River because of the possibility of water power or road construction from Spotted Bear across the Divide to Bench Mark on the Sun River. In 1939 this 31,000-acre strip was added to the primitive area. The Forest Service designated the Sun River Primitive Area in 1934. The block of 240,000 acres was located east of the Divide (on the Lewis & Clark National Forest) (Merriam 1966:28).

The first designated wilderness in Region One was the Bob Marshall Wilderness, created on August 16, 1940, by combining and reclassifying the South Fork, Pentagon, and Sun River Primitive Areas. Most of the new wilderness lay within the boundaries of the Flathead National Forest, and approximately 8% of the acreage was still alienated in the southwest portion (it was owned by the NPPR). The 950,000-acre area was named to honor Bob Marshall, a forester who had passed away at the age of 38 the previous year. Originally it was planned to name the Selway-Bitterroot Primitive Area for Marshall, but Regional Forester Evan Kelley argued that Marshall's personal interest in the South Fork and its attractiveness made it the more appropriate honor. He felt that Marshall "was largely instrumental in its continuance in primitive condition" (USDA FS "Bob Marshall" 1940; Merriam 1966:32; Graetz 1985:74).

Bob Marshall was a conservationist, a forester, one of the founders of the Wilderness Society, and a Forest Service employee who devoted much of his considerable energy and talent to the development of the national forest wilderness system. He worked for the Forest Service in Idaho and Montana from 1925-28, and in 1937 he became the Chief of Recreation and Lands in the Washington Office. In 1927 or 1928 Marshall trekked through the area that later carried his

name. Marshall was possibly the first high-level Forest Service official to protest discrimination in recreational policies. He argued that summer-home development, "elaborate" resorts, and high fees for ski lifts were exclusionary and should not be allowed on public lands. In the 1950s, when Communist-baiting was fashionable, the American Legion of Montana proposed renaming the Bob Marshall Wilderness for a Montana colonel who had served in World War I. The Forest Service rejected the proposal (Glover 1986:84, 253; Merriam 1989:83, 85).

As recreational and timber use in the Flathead Valley grew, frictions between the two began to be felt. One of the earliest controversies in Region One between advocates of resource use and environmentalists occurred in 1954 when the Flathead National Forest announced plans to offer for sale 23 million board feet of timber (primarily Engelmann spruce damaged by spruce bark beetle) on the upper Bunker Creek drainage just outside the Bob Marshall Wilderness. Harvesting the insect-infested timber would have required building a road parallel to the wilderness boundary for about 5 miles, plus another 30 miles to connect with the road at Spotted Bear. A local outfitter sparked opposition to the plan. The Forest Service dropped the plans for the sale, largely because an analysis showed the sale would be economical only if there were additional timber or road monies. Meanwhile, the Flathead Lake Wildlife Association petitioned for an extension of the wilderness boundary to the north and other groups for an extension to the south as well. Eventually the road was built up Bunker Creek, and the wilderness boundary was not extended in that area. But, the debate strengthened support for the 1964 Wilderness Act and the creation of additional wilderness areas in vicinity of the Bob Marshall Wilderness. The Scapegoat Wilderness was designated in 1972, the Great Bear in 1978 (Bolle 1959:8; Merriam 1989:84-85, 87; Shaw 1967:74-76).

By the time the Wilderness Act was passed in 1964, the Forest Service had already set aside 9 million acres that it managed as wilderness on its own administrative authority. Almost two million of those acres were in Montana (950,000 acres in the Bob Marshall Wilderness at that time) (Steen 1976:156; Baker et al. 1993:269). Forest Service management of the Bob Marshall Wilderness in the early 1960s was essentially pragmatic. In other words, three airfields were regularly used for supply, fire control, and emergencies, 6 lookouts were manned, and 14 administrative cabins were used within the wilderness.

Outfitter camps often "looked like tent cities"; in 1960 there was not yet a limit on the number of animals per party. The use of the Bob Marshall by commercial and private packers was still unregulated other than requiring the payment of grazing fees. Heavy over-use had developed. A Forest Service inspector recommended requiring permits for commercial packers, encouraging voluntary regulation, installing garbage pits and latrines at the main campgrounds, and developing more natural openings (Merriam 1989:85; 24PW1003, FNF CR).

Visitation to the Bob Marshall Wilderness increased about ten-fold between 1943 and 1959, going from approximately 500 to 5,000 visitors. More than 90% of the visitors continued to come on horses. The Bob Marshall was often called the "crown jewel" of the country's wilderness system (Merriam 1966:35; "Historical Look" ca. 1982:2-3; Gaffney 1941:429).

Mission Mountains

The first organized trip into the Mission Mountains was made in 1922 by a Northern Pacific Railroad and Forest Service group (see Figure 144). The railroad wanted to obtain photographs, films, and articles about the area so they could advertise it better. Forest Service employees Theodore Shoemaker and Jack Clack accompanied the group. They traveled from Holland Lake across the valley and up Glacier Creek into the high country. In 1923 and 1924 Shoemaker led groups of the Montana Mountaineers into the area. Soon he made the first map of much of the high country in the Missions. Northern Pacific officials and members of the Mountaineers named many of the lakes and mountains in the area (Theodore Shoemaker, 28 January 1955 memo, Classification of Mission Mountains Wilderness Area, RO; Shoemaker 1923:222).



Figure 144. Mission Mountains, ca. 1922 (photo by K. D. Swan, courtesy of the Mansfield Library, University of Montana, Missoula).

In 1931 the Forest Service classified some 67,000 acres on the east slopes of the Missions as the Mission Mountains Primitive Area, adding 8,500 acres in 1939 (the high country from Piper Lake to just north of Fatty Lake). In more recent years the Confederated Salish and Kootenai Tribes have designated the west slopes of the Missions as a tribal wilderness area. The Mission Mountain Primitive Area was changed to a Wilderness Area in 1975 (FNF "Guide" 1980; "Historical Look" ca. 1980:3).

When the primitive area was classified, the NPRR owned 30% of the land. In the late 1940s and early 1950s the railroad exchanged much of the land in the higher elevations of the area for land elsewhere in the Swan Valley. Then, in November of 1949, a windstorm blew down the trees on over 1,000 acres in the drainages intersecting the southeast boundary of the area. By 1952 spruce bark beetles had become epidemic and were spreading to adjoining stands. The Forest Service and the Northern Pacific decided to log the infested stands adjacent to the primitive area to

prevent the spread of the insects. Roads were constructed into the primitive area and then were blocked once the logging of about 2,000 acres within the boundary had been completed. In 1967, the NPRR still owned approximately 2,860 acres within the wilderness, but it has since exchanged this land (FNF "Guide" 1980; Shaw 1967:80).

Jewel Basin

For many years Cliff Merritt and other Flathead Valley residents had urged that the area now known as the Jewel Basin be designated as wilderness. The public had conflicting interests in the area, ranging from trail-only recreational use to more roads for recreational use to logging of spruce in the lower basins. The Flathead National Forest arranged a trip to the area for lumbermen, ranchers, sportsmen, and others, and as a result the group recommended that the best use of the area was for wilderness-type recreation. In 1970 the Forest Service classified the Jewel Basin as a Special Roadless Area (Cooney 1964:7-8; FNF "Forest Plan":S-15).

CONCLUSION

A Flathead National Forest employee of 1915, if transported to the Flathead National Forest of today, might have difficulty recognizing the agency and much of the land it manages, so great have been the changes over the decades. For example, most of the drainages with roads would have been reached in his time only by several days' travel on horseback or on foot. No longer in a custodial role, the Forest is now actively managing timber sales, developed campgrounds, and other resources. Many of the forest homesteads established in the early 1900s have reverted back to the agency; some of those that are still private are now summer homes.

The era of the fire lookout has come and gone, replaced by airplanes. Instead of small crews of local men hired to fight fires, large crews of men and women are often flown in from all over the country to fight fires. Radios, commercial telephone systems, and computers dominate agency communications. Some similarities with 1915 remain, however, particularly within the Bob Marshall Wilderness Complex. There, pack strings still supply backcountry administrative sites, and much of the work is still done by hand. But the presence of the agency - in the form of guard stations, trails, and the number of employees - is more apparent than it would have been in the early 1900s, when funding and other resources were quite low.

Finally, the hypothetical 1915 worker would be astonished at the changes in the Flathead Valley communities. Cars and trucks have practically replaced the railroad, and the population of the valley has grown greatly over the past several decades. Many people, including Forest Service employees, commute great distances to their jobs. Local businesses provide goods and services that were unheard of in 1915.

The history of the Flathead Valley and of the Flathead National Forest is summarized in the paragraphs that follow. This broad-brush summary gives some idea of the patterns of change and continuity - for better and for worse - that have taken place in the Flathead Valley since the arrival of the first Euroamerican in approximately 1800.

The Flathead Valley remained difficult and hazardous to access for decades after the first Euroamericans came through the area. This was due to topographical factors such as the surrounding rugged mountains and Flathead Lake, the hostility of the Blackfeet to the east, and the long, hard winters. Independent fur trappers and fur company employees ventured into the upper Flathead Valley in the early 1800s. At that time, bands of Kootenai were the main occupants of the area. The center of the fur trade in the region was farther south, in the Mission Valley. A small group of Euroamericans joined a number of Kootenai at a traditional camping ground near the head of Flathead Lake in the 1840s to form the first tentative (and short-lived) Euroamerican settlement in the upper Flathead Valley. At approximately the same time, the Hudson's Bay Company established a seasonal trading post in the Tobacco Plains Valley. Settlement in the upper Flathead, however, remained temporary and very low in numbers until the 1870s, despite several government and private surveys and explorations that traveled through and reported on the area in the 1850s through the 1870s. The establishment of the Flathead Indian Reservation in the lower Flathead Valley in 1855 further insulated the region.

In the 1860s hopeful prospectors and miners passed through the Flathead Valley on their way north to the mines in the Wild Horse Creek area of British Columbia. After that boom had slowed, some of these men returned to the Flathead Valley to prospect, a few even to settle. Gradually, the outside world was learning about the abundant natural resources of the Flathead Valley.

The real influx of permanent settlers to the Flathead did not occur until 1883, when the Northern Pacific Railroad reached Missoula over 100 miles to the south. Blackfoot hostility had lessened by this time, and transportation improvements such as steamboat travel on Flathead Lake reduced the earlier obstacles to settlement and exploration of the area. During the 1880s, settlers cleared land in the valley floor for agriculture and began exploring the surrounding mountains for mineral and other resources. Major fires in the summer of 1889 burned thousands of acres in the surrounding forests; there was not yet an organized firefighting system in the area. The town of Demersville, founded in 1887, was the largest town in the valley for a time.

With the arrival of the first Great Northern Railway train in the Flathead Valley in 1891, most of the barriers to travel into the Flathead were removed overnight. Markets for agricultural and timber products suddenly became national rather than strictly local. More and more people moved into the area. Some of the towns founded along the railroad line are still major communities in the valley, such as Kalispell and Columbia Falls; many others no longer exist.

In the early 1890s, prospectors ventured into the more remote valleys and believed they had discovered promising signs of coal, oil, and mineral resources, particularly in the drainages of the North and South Forks of the Flathead River. The financial panic that began in 1893 slowed the development of the valley, but the economy picked up again when the Klondike gold rush began in 1897 and created vast new markets for products of northwestern Montana. Prospectors continued to search the mountains and creeks for wealth, and some trails and roads were built to promising sites. None of these deposits, however, led to much development work or to the production and shipping of valuable resources.

The U. S. government, meanwhile, had begun setting aside "forest reserves" to protect watersheds on the public domain from devastation by lumbermen and fire. In 1897, President Cleveland created the two forest reserves that later became known as the Flathead National Forest: the Flathead Forest Reserve extending along the international boundary from Tobacco Plains on the west to the Blackfoot Indian Reservation on the east, and the Lewis & Clarke *[sic]* Forest Reserve, extending along the South Fork of the Flathead from the Middle Fork almost to Ovando. Despite much initial local protest about "locking up" valuable lands, the General Land Office hired rangers to protect the forest reserves from fire and timber trespass beginning in 1898.

The Forest Service was created in 1905, and its employees took over the management of the forest reserves that year. The headquarters for the Flathead National Forest (south half) were moved from Ovando to Kalispell, where the Supervisor's Office still is today. In the Flathead, these men (and they *were* all men) who patrolled the several million acres of the two national forests were faced with great difficulties of transportation and communication in the steeply sloped, heavily wooded reaches of the forests. Early rangers and other employees devoted most

of their time and energy to building trails and stringing telephone lines through the woods, always worried about wildfires burning out of control and destroying the public timber resources being held for future needs. The first phone line on the Forest was built in 1908 between Kalispell and Coram (private companies did not yet serve that route).

In 1910, fires raged throughout northwestern Montana and northern Idaho. The Forest Service was unprepared to suppress such firestorms, and over 3 million acres were destroyed by fire. Immediately after these fires, Forest Service budgets increased and lookout points were established on high peaks and ridges to aid in early fire detection. The Forest Service became the lead firefighting agency in the country. That same year, 1910, Glacier National Park was created out of the eastern portion of the Blackfoot National Forest.

Eventually, the Flathead and Blackfoot National Forests built several thousand miles of trails throughout the two Forests and established systems for supplying workers in remote areas by pack animals. The Forest Service Remount Depot, established near Missoula in 1930, provided stock and equipment to the Region One Forests for many years. Administrative buildings such as ranger stations and guard stations were built along the main trails, which branched off from the few wagon or automobile roads in the area. In 1935 the two Forests were combined into one administrative unit under the name of the Flathead National Forest.

Other agencies and private organizations were also involved in fire protection. The Northern Montana Forestry Association formed in 1911 as an association of private owners of forested land. The group hired fire patrolmen and firefighting crews to protect their lands. In the late 1910s and early 1920s, the Stillwater, Swan River, and Coal Creek state forests were carved out of Flathead National Forest lands and the state assumed the responsibility for managing and protecting these lands.

But the Forest Service was not just a fire-oriented agency in the early years. The Flathead National Forest has also managed a number of other forest resources. Beginning in 1906, the national forests opened to settlement land within their boundaries that had been determined to have agricultural value. Homesteaders settled many areas of the Flathead under this program, and although a large number of the homestead tracts eventually reverted back to the U. S. Forest Service, others remain in private ownership to this day. Homesteaders and others obtained permits to graze livestock on national forest land, but grazing was never a large program on the Flathead National Forest.

The Flathead Valley has been one of the centers of the lumber industry in the state since the 1890s, but the timber on national forest land was not harvested to any great extent until World War II. Private lands in the valley bottoms were on more level ground and were thus much more profitable to log, so the lumber companies concentrated on these areas until the mid-1900s. Timber products in the Flathead Valley during this period included sawlogs, railroad crossties, cedar poles, shingles, and lath. The one very large timber sale on the Flathead National Forest prior to World War II was the sale of almost 90 million board feet of timber in the Swan Valley, which the Somers Lumber Company logged between 1914 and 1919. The Somers Lumber Company was a subsidiary of the Great Northern Railway, and it produced railroad ties and lumber at its plant in Somers from 1901 until the 1940s.

Many Flathead Valley residents worked in the woods, often staying in logging camps during the winters. The major IWW-led lumber strikes of 1917 started in Eureka and shut down the mills in the Flathead Valley for several months, leading eventually to improved working conditions and wages for loggers and mill workers. Logging camps declined, however, as trucks replaced horses and river drives. The last river drive of logs in the Flathead Valley occurred in 1931.

World War II created a large demand for the country's timber resources, and the post-war building boom led to an unprecedented demand for timber that could not be met by logging private lands only. The Forest Service shifted from custodial, protective management of the national forests to the development and intensive use of the resources. The agency accelerated timber harvests greatly in order to meet the new demand, and roads were built into many drainages previously accessible only on foot or horseback. At the same time, the Forest Service began to use aerial fire patrol and smokejumpers to detect and fight fires in remote areas, which included much of the Flathead National Forest.

On the Flathead National Forest, the after-effects of a severe November 1949 windstorm emphasized this shift in management techniques. Previously, the blowdown of mature trees left by windstorms had generally been left unsalvaged because of difficult access and relatively low prices for timber. In the early 1950s, however, the Flathead National Forest built roads to salvage the downfall and used mechanized methods of logging to get the timber out. Spruce bark beetle epidemics developed and spread from the dead timber to live trees, and "control logging" was instituted to reduced the spread of the infestations.

The Flathead National Forest, with its excellent hunting and fishing and its magnificent scenery, has long been recognized as an important recreational area. In the early 1900s, recreational use on the forest reserves centered in the Lake McDonald area (which became part of Glacier National Park in 1910). The South Fork of the Flathead became increasingly popular, primarily among people traveling with pack animals. The Flathead National Forest also began to study and then manage the wildlife in the area, particularly big-game species such as deer and elk and "desirable" species of fish. The Spotted Bear Game Preserve was created in 1923 to protect big-game populations on the South Fork (it was eliminated in 1936). The large Bob Marshall Wilderness was designated in 1940 to protect land with exceptional scenic and wilderness values. This wilderness area, which has been enlarged in recent years, is today one of the largest and best-loved components of the nation's wilderness system.

Beginning in the 1920s, the Flathead National Forest began to build roads into the Forest to provide better access, primarily to aid in fire detection and suppression, but the roads also improved access for other Forest users, such as recreationists. The recreation program was also aided by workers enrolled in the Civilian Conservation Corps (1933-1942), who were based at several camps on the Forest during the Depression years. They built campgrounds, roads, and trails, and worked on numerous other projects on the Forest. In 1936, the Flathead National Forest could boast of 4,500 miles of trail. Trail mileage on the Forest was declining by the 1950s, however, until in 1985 there were only about 2,100 miles in the trail system. Meanwhile, road mileage had risen from 360 miles in 1936 to almost 4,000 miles in 1985.

The economy of the Flathead Valley changed in the 1950s, with the construction of Hungry Horse Dam and the Anaconda Aluminum plant and the rise in tourism. In the 1950s conflicts developed between the users of various national forest resources, particularly recreation and timber. The demands for both increased sharply after World War II, and the debate over the proposed Bunker Creek timber sale in 1954 heralded many others to come as the Flathead National Forest intensified its management and use of the Forest resources. The Multiple Use-Sustained Yield Act of 1960 attempted to provide a means of balancing the needs of various groups that used the national forests, but it actually offered little specific guidance to Forest managers.

The story of the decades following 1960 is also a story of change, with major events and trends including the passage of the Wilderness Act of 1964, the greatly increased road density (and thus resource use) on the non-wilderness sections of the Forest, and increased public participation in land-management decisions. The policies of Flathead National Forest employees today have been affected by decisions made by their predecessors beginning in 1898, and before that by the Native Americans and early non-Indian settlers of the area. As described in this historic overview, the changing management of the Forest reflects changing priorities and resource needs of the American public. Decisions made in the past will continue to inform decisions made in the future.

TIMELINE

1803	Louisiana Purchase
1804-06	Lewis & Clark expedition
1808	David Thompson travels on Kootenai River.
1810	Finan McDonald party crossed the Rockies (probably at Marias Pass)
1810-11	Joseph Howse built Howse House for the HBC
1812	General Land Office created, initiates survey of the west
1813	Pacific Fur Company sells to North West Company
1821	merger of HBC and North West Company
1828-29	Joshua Pilcher party wintered in Flathead Lake area
1830s	decline of fur trade in Pacific Northwest
1845	settlement on Ashley Creek begun
1846	Oregon Treaty of 1846 signed
1846	HBC traders began operating in Tobacco Plains
1847	Fort Connah, HBC post, opened in the Mission Valley
1848	Oregon Territory created
1849	U. S. Department of Interior created
1850	John Owen established a trading post in the Bitterroot
1852	Benetsee Finlay found gold in Montana
1853	Tinkham party passes through Flathead Valley

1853-54 Stevens railroad surveys in western Montana
1854 John Mullan party passes through Flathead Valley
1854 St. Ignatius Mission founded
1855 Hellgate Treaty passed establishing Flathead Indian Reservation
1857-60 British and American boundary surveys along 49th parallel
1858 Thomas Blakiston party passes through North Fork
1859 first steamboat traveled from St. Louis to Fort Benton by this year
1859-62 Mullan Road built
1860 Hellgate founded (Missoula area)
1860 Fort Kootenai in Tobacco Plains moved north of the boundary
1862 Homestead Act passed
1862 Gold discovered at Bannack
1862 U. S. Department of Agriculture established
1863 Idaho Territory formed, including what is now Montana
1863 Gold discovered at Alder Gulch
1864 Montana Territory formed
1864 Gold discovered at Last Chance Gulch and Butte
1864 Montana Territory created
1864 start of gold rush to Wild Horse in British Columbia
1864 federal government granted NPPR approximately 13 million acres in Montana
1867 rush to Libby Creek
1867 Gold discovered on Libby Creek
1871 Fort Connah, HBC post, closed in the Mission Valley
1871 fires in Wisconsin burned 400 square miles, killed over 1,000 people
1872 General Mining Act of 1872 passed
1872 first upper Flathead Valley post office established, at Scribner
1875 American Forestry Association organized
1877 Dawes Act opened reservations to white settlement
1878 Timber and Stone Act passed
1870s a few stock raisers lived in upper Flathead a few years
1881 Division of Forestry created within U. S. Department of Agriculture
1883 Northern Pacific Railroad reached Missoula
1883 Lt. John Van Orsdale recommended northern Rockies be a national park
1884 Ashley post office established
1884 Foy's Mill, water-powered sawmill, built in the Flathead
1885 first steamboat on Flathead Lake
1885 Canadian Pacific Railroad reached Calgary
1887 coal claims located on the Coal Banks in the North Fork

1887	Demersville founded
1889	forest fires burn large areas of northwest Montana
1889	Montana became a state
1889	<i>Inter Lake</i> first published
1890	Lt. Ahern and soldiers crossed the North Fork
1891	Great Northern Railway reached Flathead Valley
1891	coal discovered in the South Fork
1891	Kalispell founded
1891	Columbia Falls founded
1891	Forest Reserve Act passed
1891	Yellowstone Forest Reserve, first in the country, created
1893	Flathead County formed out of Missoula County
1893	Great Northern Railway transcontinental line completed
1895	Old Steel Bridge built over Flathead River east of Kalispell
1895	Montana State Fish and Game Commission formed
1897	Forest Reserve Act of 1897 passed
1897	Flathead and Lewis & Clarke Forest Reserves created
1897	start of Klondike gold rush
1898	Spanish-American War
1898	first American college of forestry opened at Cornell
1901	John O'Brien Lumber Company began production
1901	wagon road up east side of North Fork of Flathead built
1901	oil drilling in the Kintla Lake area
1902	Flathead Lumberman's Board of Trade organized
1903	oil drilling in the Swiftcurrent area
1904	Whitefish founded
1904	Great Northern Railway line relocated in Flathead Valley to the north end of the valley
1905	Administration of Forest Reserves transferred to Department of Agriculture
1905	Bureau of Forestry renamed Forest Service
1905	Forest Service Use Book issued
1905	Flathead National Forest headquarters moved from Ovando to Kalispell
1905	I. W. W. organized
1906	Forest Homestead Act opened some national forest lands to homesteaders
1906	Agricultural Appropriation bill passed
1906	first Forest Service phone line built (in Wyoming)
1907	Congress passed act prohibiting creation of additional forests from public domain within Montana and other states
1907	term forest reserves replaced by national forests

1907	I. W. W. strike at Somers Lumber Company mill
1907-08	first pack animals bought by FS for use in the northwest, brought to Big Prairie
1908	phone line between Kalispell and Coram built, first on Flathead National Forest
1909	Montana state board of forestry established
1909	I. W. W. strike at Somers Lumber Company mill
1910	Glacier National Park created by Congress
1911	Weeks Act, federal purchase of Forest lands to protect navigable streams
1911	Northern Montana Forestry Association formed
1912	Federal government mandated land classification of all national forest land
1913-19	90 MMBF Forest Service timber sale in Swan Valley
1914	first fire lookout built on Flathead National Forest, on Spotted Bear Mountain
1917	IWW strike among loggers in the Pacific Northwest
1917	Loyal Legion of Loggers and Lumbermen formed
1917	U. S. involvement in World War I
1917	Northern Pacific Railroad line completed to Polson
1917	first automobile purchased for a Region One national forest
1917	I. W. W. strike among woodworkers and mill workers in Pacific Northwest
1918	Prohibition began in Montana
1918	Sedition Act passed in Montana
1918	Stillwater, Swan River, and Coal Creek State Forests created
1920s	first logging trucks used in the Flathead
1923	Spotted Bear Game Preserve created
1924	Clarke-McNary Act passed giving funds for cooperative fire protection
ca. 1925	steamboat passenger travel on Flathead Lake ended
1925	first aerial fire patrol in Region One
mid-1920s	road from Coram to Spotted Bear built
mid-1920s	sawed railroad ties began to replace hewn ties
1922	first campground on Flathead National Forest land approved
1926	McSweeny-McNary Forest Research Act, provided for grazing fee reductions for allotment improvement
1928	Flathead Mine began production
1929	Half Moon fire
1929	stock market crash
1929	Superior Lumber Company of Columbia Falls began providing ready-cut lookouts
1930	Region One established a Remount Depot
1930	Knutson-Vandenberg Act passed allowing for cash deposits for timber stand improvement work

1931	last river drive in the Flathead
1931	South Fork Primitive Area established
1933	Flathead and Blackfeet National Forests consolidated
1933	Civilian Conservation Corps (CCC) established
1933	Prohibition repealed
1933	Pentagon Primitive Area established
1934	Taylor Grazing Act passed as a means to administer grazing on public lands
1934-35	Article X of the National Recovery Act mandatory
1936	Spotted Bear Game Preserve eliminated
1938	Fair Labor Standards Act mandated 40-hour work week
1939	President once again had authority to create forest reserves in Montana
1939	Flathead National Forest built first road up Big Mountain
1940	Bob Marshall Wilderness area designated
1942	CCC program ended
1942	coal mine in North Fork closed
1942	U. S. involvement in World War II
1940s	lumber company tugboats on Flathead Lake ceased operation
1944	Sustained Yield Management Act passed
1944	smokejumping standard practice in Region One
1945	end of World War II
1945	Continental Unit (aerial forest fire control area) created
1945	first reduction in number of lookouts on Flathead National Forest
ca. 1945	significant growth in Montana timber industry
1946	Flathead Mine closed
1947	Big Mountain Winter Sports incorporated
1948	hearings in Kalispell about proposed Glacier View Dam
late 1940s	Somers Lumber Company sawmill ceased operations
1949	severe windstorm damages much timber on Flathead National Forest
1949-53	Hungry Horse Dam constructed
early 1950s	insect infestation on Flathead National Forest timberlands resulting from blowdown of 1949
1953	Region One Remount Depot began to be phased out
1955	Anaconda Aluminum Company plant went into production
1956	Montana's first pulp mill built, in Missoula area
1957	Forest Service established Operation Outdoors
1960	Multiple Use - Sustained Yield Act passed
1969	Northern Montana Forestry Association ceased operations

GLOSSARY

adit - A horizontal drift or passage from the ground surface into a mine.

administrative site - Term used by Forest Service to denote an area reserved for administrative use of the agency, such as the site of a guard station, pasture for government stock, lookout, or camping area.

alidade (firefinder) - A sighting apparatus used by lookouts to determine the horizontal bearing and sometimes the vertical angle of a fire from a lookout.

alienated land - Land within the boundaries of a national forest that is not managed by the Forest Service. It might be owned by an individual or by a large lumber company, for example.

allotment - The area covered under a grazing permit.

allowable cut - Amount of timber that a district, forest, or region is allowed to cut in one year, generally calculated by volume.

arrastra - A drag-stone mill for pulverizing ores containing valuable minerals.

aspect - The direction a slope is facing (its exposure in relation to the sun).

backcountry - Area that does not have road access and thus is relatively remote.

bed - A horizontal seam or deposit of mineral.

big wheels - Special wagon used for hauling logs in the summers, with two very large wheels (one end of the log would be supported on the wagon, the other would drag behind it).

blaze - Mark made on a tree trunk with an axe to identify a trail.

blowdown - Timber blown over in a windstorm.

blowup - Sudden increase in fire intensity or rate of spread sufficient to prevent direct control or to upset existing control plans.

board foot - The unit in which the volume of a log is measured. A board-foot is a volume equivalent to a piece of wood one foot square and one inch thick.

brigade - During the early 1800s, a large group of men who would be sent into an area to trap all the fur-bearing animals in the region.

bucking - The process of sawing a downed tree into sections of the length desired for transportation. Bucking converts a tree into a log.

chute - A log track or trough or ditch used to transport logs from one location to another by sliding them with the help of gravity or of draft animals.

Continental Unit - Experimental aerial forest fire control area created in 1945 on 2 million acres of roadless wilderness, including part of the Flathead National Forest. The network relied on fire detection by airplane and on fire suppression by smokejumpers (primarily).

contributed time - Hours of work that a Forest Service employee does for the agency at no charge. The free work often occurs in the early morning or in the evening.

crosscut saw - A two-man saw for cutting trees in the woods.

crow's nest - A platform built high up in a tree (or trees) to provide greater visibility to lookouts.

cruise timber - To estimate the amount and species of standing timber in a given area.

cutover land - Land on which the timber has been harvested (also known as "stumpland").

deck of logs - A temporary pile of logs awaiting transfer to another location via log chutes, hauling roads, river drive, logging railroad, etc.

Decker packsaddle - Replaced the sawbuck and diamond hitch used on pack animals in the Forest Service in the 1920s.

diamond bitch - Method of tying a load on a pack animal that was replaced in the 1920s by the Decker packsaddle.

dispatcher - Person employed to receive reports of discovery and status of fires, confirm fire location, take action promptly to provide fire fighters and equipment likely to be needed to control a fire in initial attack, send them to the proper location, and support them as needed.

downfall - Trees that have fallen down (generally used referring to obstacles on a trail).

drift fence - Fence built to prevent the wandering of unpermitted cattle and sheep onto national forest grazing allotments.

emergency phone - Temporary phone wire and phone set up for a fire camp or other temporary situation.

enrollees - Term used for men enrolled in the Civilian Conservation Corps, 1933-1942.

entryman - Person applying for or proving up on a national forest homestead claim.

extensive land classification - Broad classification of possible land uses on Forest Service land.

fallers - The men who cut down trees.

fire danger - A general term used to express an assessment of fixed and variable factors such as fire risk, fuels, weather, and topography, which influence whether fires will start, spread, and do damage and the expected difficulty controlling the fire.

firefinder - see "alidade."

firefinder map - A map, generally mounted on a wood or metal base, that is provided with an azimuth circle, at the center of which is pivoted a firefinder.

fireline - The part of a fire control line that is scraped or dug to mineral soil.

flume - A long trough filled with running water used to transport logs from one place to another.

Forest highway - Sections of state, county, and other important public roads in and adjacent to the national forests that provide primary access to the Forest.

Forest road - Roads needed primarily for the protection, development, and administration of national forest lands.

free hunter - Independent fur trapper who sold furs to the fur companies but was not an employee.

grazing allotments - Specific area assigned to stock under a grazing permit.

guard station - Complex of buildings located at a Forest Service administrative site. Typically includes a cabin, outhouse, barn, and other outbuildings.

gyppo - Contract worker instead of employee, as in gyppo logger or gyppo trail crew.

heliograph - Device used in 1910s by Forest Service workers to send messages from lookouts to ranger stations. Used mirrors to reflect the sun's rays in code.

intensive land classification - Forest Service program of the 1910s to determine which land in the national forests could be listed for homesteading.

KV funds - The Knutson-Vandenberg Act of 1930 allowed the Forest Service to require purchasers of national forest timber sales to make cash deposits to cover the cost of planting, seeding, or thinning the sale area to improve the future timber stand.

local experienced men (LEM) - Locally hired men who worked as foremen and supervisors of CCC enrollees.

lode - Aggregations of mineral matter containing ores in fissures.

long-butted - A tree that is cut with a high (often over 4') stump.

lookout - Site of a fire detection site, the fire tower or building used to detect fires, or or the person looking for fires.

main-line packer - Packer who provided supplies along the main trail through a ranger district.

mantying up - Preparing a load to be carried by pack animals by wrapping it in canvas and tying it with rope.

map board - Board mounted on a stand on a lookout point that was used as a support for a map when surveying the area for fire.

MBF - Thousand board feet.

millpond - The pond in which the logs for the mill are contained, whether it be an artificial pond or a boom within an existing body of water, such as Flathead Lake.

miner's phone - A heavy iron telephone used by the Forest Service on its backcountry phone lines.

MMBF - Million board feet.

mopping up - Final stage of fire suppression (checking for smoke, turning over logs, etc.).

outfitter - Person who takes recreationists into the backcountry for a fee.

pack animals - Animals used to haul supplies, generally horses and mules in the United States.

pack string - At least two pack animals trailed or roped together and led by a packer riding a saddle horse.

packer - Person in charge of packing and delivering supplies to backcountry workers.

peavey - A lever used in logging that is similar to a cant hook but has a strong sharp spike on the end.

placer - A placer where gold is found. Includes all forms of mineral deposits except veins in place (hard-rock lodes).

prescribed burning - The burning of forest or range fuels on a specific area under predetermined conditions so that the fire is confined to that area to fulfill forestry, range, wildlife management, sanitary, or hazard reduction objectives.

presuppression - Work done to aid in fire suppression before a fire started, such as trail construction or phone line maintenance.

pulaski - Combination chopping and trenching tool widely used in fireline construction which combines a single-bitted axe blade with a narrow trenching blade (resembling an adze hoe) fitted to a straight handle.

rag camp - Camp where the worker(s) stayed in a canvas tent.

railroad ties - Crossties on a railroad track.

Regional Office (RO) - Administrative headquarters of each Forest Service region. The Regional Office for Region One is in Missoula.

Remount Depot - Forest Service ranch located near Missoula that provided pack animals to the various Forests as needed and wintered the stock.

river drive - Method of transporting logs by which the logs were floated down a river or stream to the millpond.

river pig - A man who works on a river drive, preventing log jams and keeping the logs moving.

rocker - A long cradle that uses a rocking motion to separate placer gold from sand and gravels.

scaling timber - Determining the amount of board feet in a log.

school section - Sections 16 and 36 of every township, granted to the states to raise money for schools.

seen area - Literally, the area visible from a lookout point.

shaft - A well-like excavation in the earth.

skidding - The process of pulling logs over skid trails, using draft animals harnessed to single logs or strings of logs, or to sledges carrying logs, or using tractors.

slash - The debris left after trees have been felled and trimmed for logs.

sluice - Long connected troughs through which gold-bearing earth is washed; the cleated bottom catches the gold particles.

smokechaser - Forest Service worker assigned to go to a fire as soon as it was detected and begin fire suppression work.

smokejumper - Person who parachutes out of a plane to a remote fire and then works on fire suppression.

snag - A standing dead tree or part of a dead tree from which at least the leaves and smaller branches have fallen.

special-use permit - Permits issued by the Forest Service for such uses of Forest Service land as summer home sites, commercial outfitting, and dam sites.

spike camps - Small, temporary camp located in a remote area to accommodate workers.

splash dam - A dam built on a stream normally too small to accommodate a log drive. The dam was used to create a flood that enabled logs to be driven further downstream. The flood was released by dynamiting the splash dam, or by opening a sluice through which water and logs could be allowed to pass.

springboard - Pieces of wood that sawyer stood on while long-butting a tree.

stamp mill - Machinery for crushing ores.

steam donkey - A winch used to pull logs in from the loads, for loading. etc. Originally steam powered with a vertical boiler mounted on a sled made of logs.

Supervisor's Office (SO) - The main administrative office of a national forest. On the Flathead National Forest, this is now located in Kalispell (the south half was originally administered out of Ovando).

suppress a fire - Extinguish a fire or confine the area it burns within fixed boundaries.

sustained yield - A yield of forest products that can be sustained in perpetuity, with an approximately even annual yield. The purpose is to achieve an approximate balance between net growth and harvest.

10% funds - The percentage of Forest Service receipts that is given to the counties for use on schools and roads.

tie hacks - Men who hewed railroad crossties in the woods.

timber cruiser - Person who estimates the volume and value of marketable timber on a tract of land and maps it out for logging.

timber trespass - Stealing timber from the public domain.

timber famine - Term used in the 1800s and early 1900s to describe the anticipated shortage of timber in the United States.

truck trails - Forest Service road built to a minimum standard, often to allow truck access during a fire.

voyageur - Man employed by a fur company to transport goods and men to and from remote areas, principally by boat.

wannigan - Floating cook shack used on a river drive.

way trail - Trail built to a minimum standard.

windfall - Trees uprooted or snapped off by high winds.

withdrawal - Forest Service term for reserving land within a national forest for a specific purpose, such as an administrative site.

working circle - Management unit of a national forest that included non-Forest Service land for planning purposes (primarily for timber sales).

yard - The location of a group of log decks.

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Abbreviations used in bibliography and citations:

FCL	Flathead County Library, Kalispell, Montana
FNF	Flathead National Forest
FNF Adj	Adjustments files, Cultural Resources, Supervisor's Office, Flathead National Forest, Kalispell, Montana
FNF Class	classification files, Cultural Resources, Supervisor's Office, Flathead National Forest, Kalispell, Montana
FNF CR	Cultural Resources files, Supervisor's Office, Flathead National Forest, Kalispell, Montana
FNF Lands	Lands files, Supervisor's Office, Flathead National Forest, Kalispell, Montana
FRC	Federal Records Center, Seattle, Washington
FSA	Fort Steele Archives, Fort Steele, British Columbia, Canada
GNP	Glacier National Park library, West Glacier, Montana
GNPA	Glacier National Park archives, West Glacier, Montana
GVRD	Glacier View Ranger District files, Columbia Falls, Montana
HBC	Hudson's Bay Company archives, Winnipeg, Manitoba
HHRD	Hungry Horse Ranger District files, Hungry Horse, Montana
MHS	Montana Historical Society library, Helena, Montana
MSU	Montana State University library, Special Collections, Bozeman, Montana
NA	National Archives, Washington, DC
NMFA	Northern Montana Forestry Association papers, MSS 85, Mansfield Library, University of Montana, Missoula, Montana
R1 PR	Northern Region press releases, 1936-61, USDA Forest Service
RG	record group
RO	Regional Office history files, USDA Forest Service, Missoula, Montana
RS	record series
SBRD	Spotted Bear Ranger District files, Spotted Bear Ranger Station, Montana
SKCC	Salish-Kootenai Community College library, Pablo, Montana
SLRD	Swan Lake Ranger District files, Bigfork, Montana
TLRD	Tally Lake Ranger District files, Whitefish, Montana
UM	Mansfield Library general collection, University of Montana, Missoula, Montana
UMA	Mansfield Library archives, University of Montana, Missoula, Montana
USDA FS	United States Department of Agriculture, Forest Service

Note: Known repositories of the relatively difficult-to-find materials are listed at the end of the citations in square brackets.

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