SMOKE *rising from the Brule Lake fire of July, 1929*

Some MAJOR FOREST FIRES *in the* SAWBILL COUNTRY

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THE SAWBILL TRAIL AREA of Cook County in the Superior National Forest is the section of the Arrowhead country which has suffered most severely from forest fires since World War I. At least once in each decade thousands of acres have been burned, leaving scorched earth, denuded hills, and broad areas of little value either to the lumber industry or to the public. In 1929, 1936, and again in 1948 the story was the same — a drought-seared forest, high wind, low humidity, a spark of some kind, and flaming terror rode the North Shore woodlands of Lake Superior. Thanks to the men of the United States Forest Service and their coworkers, fire losses are now being reduced substantially. The record of the major forest fires in the Sawbill country well illustrates the definite progress in fire detection and suppression that is being made with new techniques and equipment of inestimable value.

The most serious of the Sawbill fires occurred in 1929 in the vicinity of Brule Lake.[1] At that time there were no automobile roads in the area, but the General Logging Railroad stretched across Cook

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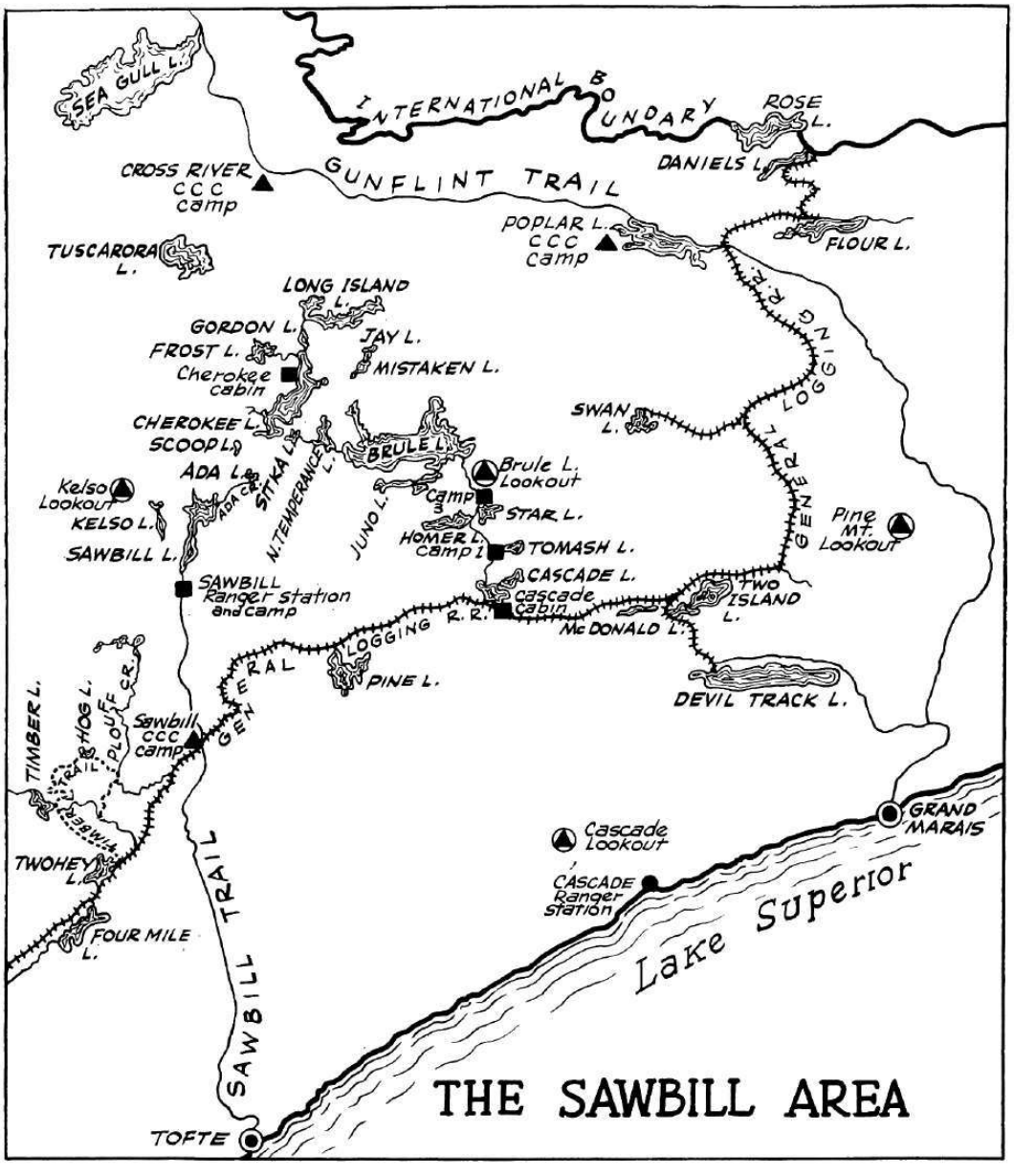
[1] This study is based on official reports in the files of the supervisor of Superior National Forest, located in the offices of the United States Forest Service at Duluth. All documents cited are among these records. On the Brule Lake fire, see memorandums by E. W. Tinker, June 3, 1929; Forester Johnson, November 30, 1929; A. G. Hamel, August 10, 1929; and Crosby Hoar, March 3, 1930. See also Hamel to district forester, telegram, August 2, 1929; log of activities at Grand Marais headquarters; R. B. McKennan, "Damage Appraisal of Camp 3 Fire Area," January 3, 1931; and the *Duluth News-Tribune*, July 23, 29, 1929.



County in a northeast-southwesterly direction along a line extending from Four Mile Lake to Twohey, Pine, and Cascade lakes and northward to Rose Lake on the border The General Logging Company, a branch of the Weyerhaeuser interests, was hard at work cutting the white pine stands it had acquired about a decade earlier from the Alger, Smith Company. Some independent loggers were also working in the vicinity. The woods buzzed and rang with the sound of saw and ax as the last big reserve of Minnesota white pine fell to the lumberman. The presence of hundreds of lumberjacks, the use of steam locomotives, and the existence of widespread pine slash all boded ill for forest safety in 1929, the year of tragedy for Brule Lake.

Not that a serious fire was unanticipated. Six weeks before the fire, on June 3, United

States District Forester E. W. Tinker, after inspecting the Brule district, was aware of the dangerous conditions. He felt, however, that the protective organization of the United States Forest Service would be able to cope with the situation, and he noted that Frank Kelly, the General Logging Company's superintendent and a former Forest Service man, had promised full co-operation. Kelly had suggested that his firm purchase fire-fighting equipment to supplement that of the Forest Service. The company was using a speeder patrol following each logging train and had removed the slash along the right of way and in some other hazardous areas. Tinker observed that the Minnesota slash disposal laws were not being obeyed in many parts of the Brule country, but he felt that their enforcement was the duty of the state commissioner of forestry.

FIRE struck on July 22. At 11:00 A.M. a man at Camp 3 called the Cascade ranger station to report smoke along the logging company's railroad spur near Star Lake; five minutes later Pine Mountain Lookout also sighted the smoke. There followed twenty-one days of the most miserable fire fighting ever known on the North Shore of Lake Superior.

Immediately upon receipt of the call, a ranger and two men left by speeder for the fire, which was only about three and a half miles from Cascade. They arrived at 11:30 A.M. and found a Camp 3 foreman with thirty lumberjacks trying to fight the blaze which, fanned by a twenty mile an hour west wind, already had jumped to the east side of Star Lake. Realizing that the situation was serious, the ranger went north to Camp 3 and called Cascade for help, instructing the clerk there to notify the Grand Marais forestry headquarters. Then the camp's telephone line burned out. Fortunately the Grand Marais ranger notified Forest Supervisor A. G. Hamel at Ely, who immediately ordered a substantial fire-fighting crew to Brule.

Transportation, however, was a problem. Fire fighters from both Ely and Duluth had to drive long distances to reach the junction where the Sawbill Trail met the General Logging Railroad nineteen miles north of Tofte. There a logging train was waiting to take the first seventy men to arrive another sixteen miles northeastward to the scene of the conflagration. In the meantime, 186 more fire fighters left the logging company's camps at Swan and Flour lakes, over twenty miles northeast of Cascade by railroad. By the evening of July 22 a substantial fire control force was assembling.

ON THE FIRE LINES things were going badly. About 4:00 P.M. on July 22 the wind shifted to the northwest, making the fire even more dangerous, as another logging camp and the company's main base at Cascade were then threatened. At 5:20 P.M. the clerk at Camp 1, only a mile and a half north of Cascade, called the General Logging Company's headquarters there, excitedly asking that an engine be sent immediately to pump water. Apparently the superintendent, who was at supper, could not believe that the fire had traveled over two miles during the afternoon, and he consequently took no action. At 6:10 P.M. a second desperate call came from Camp 1 saying that the whole place was in flames. Fortunately, all personnel escaped.

Under the direction of Raymond Harmon, assistant forest supervisor, the attack on the fire began in earnest at 3:00 A.M. the following morning, with more than two hundred men on the fire lines. Although the crews worked eighteen hours a day, the fire continued to spread west and north during the next three days, jumping Homer Lake and moving on the wings of a southwest wind. On July 26, seventy more fire fighters were sent from Duluth. A seaplane, which arrived with supplies from Ely, was used to scout the fire. Nevertheless, it burned over two more miles to the north, approaching Juno Lake.

Then on the night of July 27, the wind

swung a hundred and eighty degrees, blowing strongly from the northwest and threatening the town of Cascade. On July 29 Superintendent Kelly of General Logging successfully directed a dramatic fight to save the village. Elsewhere, the fire raged out of control, and two small private logging camps were destroyed. At one of them, on the south shore of Brule Lake, death was close at hand when a barge used to evacuate the lumberjacks caught fire and they were rescued in an alligator boat.

A CHANGE in strategy was tried on July 31. Since the flames had passed the logging company's lands, United States foresters took complete charge of the fire lines, which by this time extended from several miles south of Cascade to the south shore of Brule Lake. The situation was further complicated by a spot fire two miles north of the lake which necessitated the switching of substantial crews back and forth across the log-filled lake.

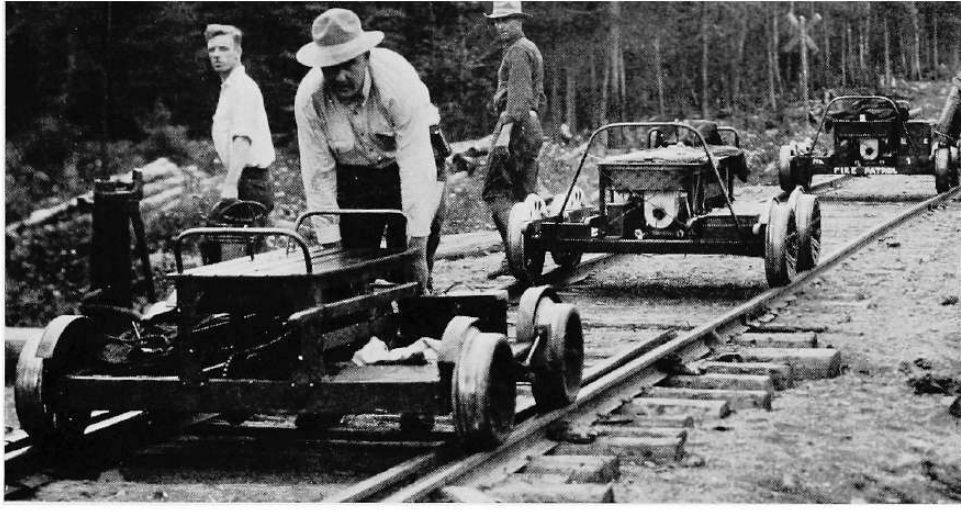
Reinforcements continued to arrive. Seventy more fire fighters were sent from Duluth on August 1, and, in response to pleas for help, United States foresters from other areas went to Brule Lake. Equipment, including some belonging to the state, also was sent from outside the district. Substantial rains on August 7 proved a lifesaver, but four days of grubbing were still required to completely surround the burning area with fire lines.

Before it was extinguished, the Brule Lake fire had blackened 25,708 acres, 4,448 of which were national forest lands. Loss to the government was estimated at $55,981. To extinguish the fire cost the Forest Service over $20,000, and substantial sums were paid by the General Logging Company to its crews.

The Brule Lake fire marked a milestone in the history of Minnesota forest fire suppression, for it evidenced a good deal of co-operation among United States foresters, Minnesota Forest Service personnel and state game wardens, and private loggers. No one agency had been capable of controlling all the seventeen fires which burned simultaneously on August 2, 1929. The conflagration clearly demonstrated that the United States Forest Service's personnel and equipment in the Superior region were inadequate for handling serious fires, and it saw an innovation in fire-fighting techniques — the use of the seaplane for carrying supplies and for reconnaissance — which has since become indispensable.

DURING THE 1930s renewed interest in conservation, promoted by President Franklin D. Roosevelt's New Deal, fostered important changes in the forests of the Arrowhead. The boundaries of Superior National Forest were greatly extended, and the Civilian Conservation Corps program made available hundreds of young men for work on forest development, road and portage building, tree planting, timber stand improvement, and fire fighting. Weather conditions during the 1930s were unfortunately ideal for fast-spreading fires, since most of the summers were exceedingly dry. The 1936 season was especially memorable for three serious fires which devastated nearly ten thousand acres, including the heart of the Sawbill canoe country.

The afternoon of Saturday, July 11, was unusually hot, with large thunderheads in the sky. Shortly after noon a light shower, preceded by heavy flashes of lightning, passed north of Sawbill Lake. The towerman at Kelso Lookout reported several lightning strikes a few miles north of his post, but no smoke was visible. At 3:45 P.M. the next day he sighted a gray-white plume rising to the northeast and notified Sawbill camp of his discovery; simultaneously the Brule Lake Lookout reported the smoke. A cross-reading placed the fire near the portage between Gordon and Cherokee lakes — dangerous fire country containing some old pines and much dead and down balsam and other timber. D. M. Williams, United States forest ranger at Tofte, was immediately notified, and he at once requested



FIRE *patrol speeders used at Cascade in 1929*

help from Grand Marais, Ely, and Duluth.[2]

Reaching the fire was a difficult matter. The area was inaccessible by truck or by rail. Various methods of transportation and two principal routes were used, one by way of Sawbill Lake and another via Brule Lake. The first meant a truck trip to Sawbill Lake, followed by a four-hour canoe run through Ada Creek, Ada and Scoop lakes, Cherokee Creek, and then across Cherokee Lake to the blaze. Fire fighters using a second route went by truck and logging railroad from Grand Marais to Brule Lake, then via motor boat, barge, and canoe through North Temperance and Sitka lakes to Cherokee — a trip that required eleven hours. Most of the fire fighters used the shorter Sawbill route.

WILLIAMS was the first to reach the fire, arriving by seaplane about three hours after he received the report. The blaze then covered some sixty acres and was threatening the Cherokee ranger cabin. Williams immediately sent the plane to Seagull Lake for a fire pump, and by 8:00 P.M. he and a mechanic had it in operation. The two men saved the Cherokee cabin and a few virgin pines, the only timber on the whole north side of Cherokee Lake to be rescued.

By 8:30 P.M. fire crews began arriving from Sawbill, and by 10:00 P.M. seventy men were fighting the flames. Augmented by reinforcements, the crews worked all night building fire lines. At one point the Grand Marais men even succeeded in getting around the head of the fire. Until 10:30 A.M. on July 13, good progress was made in checking the blaze, with 134 men on the lines and more help coming.

Then the situation took a turn for the worse. The temperature soared into the nineties and a twenty mile an hour wind arose from the northwest.[3] With little warning the fire roared out of control, jumped more than a quarter mile across the east bay of Cherokee Lake, and went racing down its east shore. The fire fighters, now 295 in number, were forced to take refuge on islands as the rampaging flames ate their way southeastward. By late afternoon the magnificent pines of North Temperance Lake were engulfed, and the fire was rolling toward Brule Lake.

At 3:30 A.M., July 14, reorganized crews attacked the flames anew. Fire lines were built from Cherokee Lake to Jay Lake on the north and to North Temperance Lake on the south. Crews working slightly west of Brule Lake constructed lines around the east flank. Heavy rain on the night of July 14 helped immeasurably, and by July 18 the

[2] The story of the Cherokee Lake fire is dramatically recorded by Williams in "Form 929 B-C, Individual Fire Report, Cherokee Lake Fire" and an accompanying memorandum dated October 7, 1936; and in a "Memorandum" prepared by Albert Pecore on October 5, 1936. On October 18, 1957, the author interviewed Mr. Hugo Sundling of Duluth, who worked on the fire.

[3] *Duluth News-Tribune*, July 14, 1936.

RANGERS *with fire tools, Cascade, 1928*

fire was entirely trenched and under control. In all, 619 men were required to halt the flames.

The Cherokee fire burned 3,199 acres of wilderness canoe country, including some of the handsomest pines in the Sawbill area. It cost nearly $40,000 to suppress, and the timber loss on national forest lands alone was estimated at $38,000. One forest officer, G. H. (Jerry) McDonald, superintendent of Sawbill camp, died in the fire. He disappeared on Friday, July 17, during the final stages of the battle; on Sunday morning his body was discovered by CCC men in Sitka Lake. His canoe had upset while he was crossing the lake, and apparently he had been too exhausted by a solid week of fire fighting to swim to shore.

THE FOREST FIRE SITUATION in 1936 attracted considerable public attention. The Duluth newspapers gave the Cherokee blaze, as well as those occurring later, front-page coverage — a sharp contrast to the almost complete lack of public information on the Brule Lake conflagration only seven years earlier. Throughout July and August the incidence of fires rose alarmingly as heat records were established in the Arrowhead country. On July 17 there were fourteen small fires in the Gunflint area alone; on July 18 thirty minor blazes were recorded in the eastern part of Superior National Forest. Additional fire-fighting equipment, including canoes, motors, pumps, and trucks, was rushed into Minnesota from other states.[4]

Then at 11:45 A.M. on August 6, both the Kelso and Wanless lookouts reported smoke in the inaccessible country north of Timber Lake. Fighters were dispatched immediately from Sawbill camp; they walked six miles due west through heavy forest and brush to the fire. An aerial reconnaissance crew discovered that the blaze was a mile and a half south of the location initially reported, hidden in a blind spot between two high hills near Hog Lake. Informed of this discovery, Ranger Williams sent eighty men by speeder over the General Logging Railroad to the Timber Lake Trail, where they began a seven-mile hike to the fire. The next day 120 men were fighting a losing battle with the racing flames, which forced some to take shelter in the area already burned. On August 8, the force was enlarged by 145 more fighters, but the fire steadily advanced to the northeast, making most destructive progress on August 9.[5]

Since all the available CCC men from the Sawbill and Wanless camps and the Isabella district were on fire duty, it was necessary to bring in three hundred civilians from Duluth. These crews walked to the fire lines over five miles of hastily constructed tractor road from the Sawbill Trail. With the aid of 570 men, several bulldozers, and a heavy rain on August 11, the Hog Lake fire was brought under control. By that time, 970 acres had been burned, with a timber loss of $7,762 and a suppression cost of nearly $23,000. Improved fire-fighting methods employed on this fire included the effective use of air reconnaissance, the building of an emergency tractor road, the application of the bulldozer to fire-line building, and the field construction of emergency telephone lines.

[4] *Duluth News-Tribune*, July 15–20, 1936.

[5] For graphic accounts of the Hog Lake fire, see Williams, "Form 929 B-C, Individual Fire Report, Hog Lake" and an accompanying memorandum; F. H. Anderson, "Memorandum Concerning My Action on Hog Lake Fire"; and H. Q. Nelson, "Hog Lake Fire."

WHILE THE HOG LAKE FIRE was being controlled on August 12, more trouble was developing only fifteen miles to the northeast, near Frost Lake. Heavy haze and smoke obscured the towermen's view, making the usual fire detection system useless. In an effort to keep the area under surveillance, the Forest Service instituted an aerial patrol. At 6:20 that evening a seaplane crew spotted a small lightning fire of about two acres in extent approximately one-fourth mile north of Frost Lake. The plane immediately landed at Poplar Lake. where patrolmen reported the fire and obtained a three-man crew.[6]

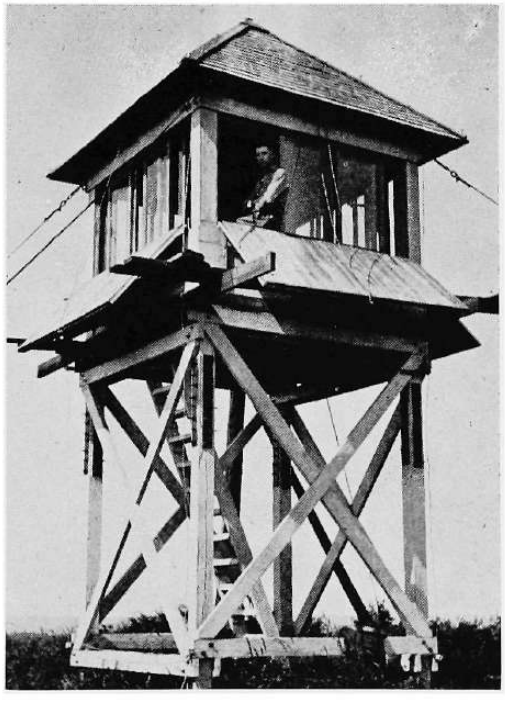
Meanwhile the Poplar Lake CCC camp notified Williams, the ranger at Tofte, who sent radio instructions to a patrol crew on Mistaken Lake, only five miles from the fire. He specified that the plane should fly three men to Frost Lake to take initial action on the blaze; they were to be reinforced within a few hours by fifteen veteran fire fighters who were to go by canoe from Mistaken Lake. Normally, such prompt action would have been sufficient, and the Frost Lake fire might have been just another of the hundreds of small blazes extinguished in a routine way.

Unfortunately everything went wrong. The three men flown in at nightfall were green fire fighters who simply blazed a trail to the flames and then decided to await the coming of the veterans. In the darkness the experienced fire crew got lost on unmarked portages and arrived eight hours late. In the meantime, the fire had spread over twelve acres and was growing fast. The crew radioed for help and forty more men were flown in. Still the fire continued to spread rapidly, until, on the evening of August 13, it covered about 250 acres.

Reinforcements were rushed from the Sawbill and Cross River camps. On August 14 fifty men traveling by way of Tuscarora Lake failed to find the fire (which had not been properly located), and, as a result, it gained headway and doubled in size. So serious had the situation become that Forest Supervisor Harmon arrived to personally take charge.

But the fire remained a forester's nightmare, fanned by strong winds that wildly changed directions ten times in eleven days. On a single day, August 17, eight hundred acres went up in smoke, despite the efforts of 560 men. On August 18 a fire camp on Long Island Lake narrowly escaped destruction when the wind shifted, completely surrounding the camp with flames. Only after a heavy rain fell on August 22 were eight hundred fire fighters able to corral the Frost Lake fire. A total of 3,392 acres burned, and the scenic pine forest along the canoe route between Gordon and Long Island lakes was utterly devastated. Over forty-six thousand dollars worth of timber on national forest land was destroyed, and fire suppression costs reached more than twenty-five thousand dollars.

PINE *Mountain Lookout in the 1920s*



[6] For descriptions of the Frost Lake fire, see a typewritten account by J. W. Trygg, "The Frost Lake Fire," October 6, 1936; "Frost Lake Fire Annex and Map," and "Form 929 B-C, Individual Fire Report, Frost Lake."

The Frost Lake blaze, however, saw substantial progress in the application of fire-fighting techniques. Eight hundred men reached an inaccessible area over a land and water route requiring a travel time of at least four hours. For a week they received supplies by seaplane, canoe, back-pack, and tractor. The equipment list shows that thirteen pumps, forty-one canoes, four boats, two radios, and a portable telephone were used. The size of the fire was not surprising, considering the unfavorable weather, but it was regrettable that a series of misfortunes allowed the blaze to break away in its initial stages and thus destroy much magnificent recreational country.

SINCE 1936 the Sawbill country has twice been threatened by forest fires.[7] On July 29, 1947, a careless fisherman touched off a fire with a cigarette that burned 122 acres west of the old Sawbill CCC camp in the Plouff Creek area. Vigorous action on the part of Forest Service men and others prevented serious loss, although it cost twenty-two thousand dollars to extinguish the fire.

The other threat was not so easily controlled and grew into a major conflagration known as the Plouff Creek Fire No. 2 — the worst fire scare on the North Shore in recent years. It began on June 11, 1948, when careless smoking by woods workers ignited a blaze two miles northeast of the former Sawbill CCC camp. The fire was attacked immediately and held to 102 acres.

This blaze, however, was the indirect cause of a more serious one that began near by the following day. A logger on Plouff Creek, who had sent his regular bulldozer to fight the first fire, continued to haul logs with a spare tractor. This extra machine, which lacked an exhaust pipe, apparently dropped sparks into the dry undergrowth, which flared into a mass of flame that raced south along the Sawbill Trail.

The efforts of over two hundred fire fighters with five bulldozers and a dozen pumpers could not stop the blaze from raging toward the shore of Lake Superior. In response to urgent appeals for help, neighboring forest districts and the supervisor's office at Duluth sent 852 men, twenty-one bulldozers, and twenty-nine pumper units to the scene. Within forty-eight hours, twenty miles of fire line had been built, and the flames had been checked. Even so, twelve hundred acres were burned, and an ugly scar cut across the Sawbill Trail in what had been a beautiful jackpine forest.

The Plouff Creek fire provides an example of a new trend in fire protection which accents rapid mobilization of heavy equipment and a quick concentration of fire fighters. Using these techniques, the area burned can be held to a minimum, but the operations are expensive. Although the timber loss in the Plouff Creek fire amounted to only eleven thousand dollars, the cost of extinguishing the blaze was more than a hundred thousand dollars. In the end, however, the high potential damage, as well as the possible loss of life, justify such expenditures.

These were the major fires of the Sawbill country. While not as spectacular as the earlier tragic holocausts at Hinckley and Cloquet, the conflagrations caused serious damage to the recreational attractions and to the timber production in the area. Although the forest is now recovering its scenic beauty, its charred timber offers an ominous warning of what could happen should fire protection slacken in this extensive spruce and jackpine woodland. On the brighter side, fire-fighting experience in the Sawbill country conclusively proves that forest fires in Minnesota can be checked by quick action with substantial forces. Great progress, indeed, has been made in limiting the damage sustained by a forested area from the scourge of uncontrolled fire.

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[7] See "Form 929, Individual Fire Report," for both Plouff Creek fires; C. L. Van Giesen, "Memorandum," December 17, 1948; and an "Analysis of Plouff Creek No. 2 Fire."

THE PICTURES are owned by the United States Forest Service, Duluth (p. 131, 137), and the General Logging Company, Cloquet (p. 134, 136).