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National Park Service
Region One

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THE MOUNT DESERT ISLAND FIRE
OF
OCTOBER 17 - NOVEMBER 14, 1947

WITH PARTICULAR REFERENCE
TO
ACADIA NATIONAL PARK, MAINE

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A Report Prepared By:

Fred H. Arnold, Regional Forester
Wilbur L. Savage, Forester
Robert B. Moore, Forester

February 27, 1948

(Date of Completion)

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THE MOUNT DESERT ISLAND FIRE OF OCTOBER 17 - NOVEMBER 14, 1947
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Name of the Fire

This fire is referred to as the Mount Desert Island Fire because more than one-fourth of the total area of that island was burned by the fire and the entire island was imminently imperiled by it. The general public speaks of the fire as the "Bar Harbor Fire," and undoubtedly it will go down in history by that name. Caught suddenly in the violent onslaught of the gale-driven holocaust raging through woods in the closely adjacent tinder-dry coniferous forest, the town of Bar Harbor became a catastrophic inferno on the evening of October 23. It narrowly missed total destruction. Nationwide headlines flashed the frightful plight of Bar Harbor as the horrifying spectacle of a town in flames wrote another page in the history of urban fire disasters. Sensational front page stories everywhere told of the mass evacuation of town inhabitants by land and water -- a "Second Dunkerque" they called it; of millions of dollars' worth of sumptuous summer homes raised to unbelievably small masses of rubble and ash. They related also how two lives were lost and how, with heroic effort and almost miraculous achievement, the major portion of the town was saved, including the business section.

Purpose and Scope of Report

This is a record of the less sensational aspects of the fire. It deals with the 17,133 acre forest fire, and more particularly with the 3,750 acre portion of it within Acadia National Park, representing nearly

one-third of the park's total area. This is the story of the origin, spread, and suppression of the fire on its far-flung fronts coursing erratically through forest and open from the rock-bound ocean shore over gentle lowlands, flat marshes and meadows, beside lake shores, and across or along roads, trails, rocky streams, rugged slopes and ridge tops to grass the summits of the two highest mountains on the island.

The suppression action described is mainly that directed to save as much as possible of the improvements and natural features in the park, which are important to its use and attractiveness for recreation, while at the same time serving to prevent further spread of the fire to villages and private property on the island. Damage, costs and other effects of the fire are similarly considered primarily in relation to the park and the Service.

The report is prepared in response to a request from the Director's Office for a comprehensive official record of the forest fire. On the basis of that request the intent has been to embody in the report a record of (1) basic or background information regarding the island, the park, and fire control; (2) conditions under which the fire started, spread and was suppressed; (3) suppression action as directed by the Service in conjunction with other agencies; (4) direct, indirect and contributed costs to the Service for suppression; (5) extent of fire damage to the park; (6) estimated cost of resulting clean-up and rehabilitation work within the park; and (7) transcripts of fire logs, preliminary reports and miscellaneous data pertinent to the fire or to fire control in the park. The report would be incomplete without setting forth some conclusive lessons to be derived from this fire -- the largest in Acadia National Park and Region One history.

The Island and the Park

Mount Desert Island is situated on the coast of Maine about 155 miles northeast of Portland via U. S. Highway 1 and State Highway 3. Approximately 100 square miles in area, the entire island is devoted largely to recreational use. Villages are located principally along the coast, on the coves, harbors and Saco Sound which indent the rocky shore. Bar Harbor, famed as a summer resort, is the largest urban place on the island, having a year-round population of about 4,500. It is located midway along the coast of the island's eastern lobe. (See appended U.S.G.S. map).

The entire coastal perimeter of the island is readily accessible by paved roads. For a mountainous area the interior is unusually well traversed by roads and an extensive system of foot trails. This factor played an important part in the suppression action on the fire.

The headquarters of Acadia National Park is situated on the southern edge of Bar Harbor. On the map its location can be spotted as within the little area cross-hatched in red just above the abbreviation "Sk." The park area, 23,332 acres in aggregate, is composed of many disconnected and widely separated areas. With outlying portions located chiefly on Schoodic Peninsula and Isle au Haut, the major portion of the park is on Mount Desert Island. There it occupies mainly the more rugged interior portions, in unjoined tracts of irregular size and outline.

Forest and Soil Conditions

About 80% of the island, and an even larger portion of the park is forested, as will be noted on the U.S.G.S. map. Forest cover consists

of coniferous, deciduous and mixed coniferous - deciduous types extending from sea level to the rocky subalpine or barren crests of the higher mountains -- Cadillac, Sargent, Kerr (Flying Squadron on the map), and others. (Cadillac Mtn., elevation 1,530 feet, is the highest geographic point on the Eastern seaboard). Coniferous forests contain red and white spruce, balsam fir and Eastern white pine as major species. The northern hardwoods (American beech, yellow birch and sugar maple) with gray birch, the two native aspens and Northern red oak are the predominant species in the hardwood types. Both type groups have numerous secondary tree and shrub associates and advance tree reproduction is usually plentiful.

Outcropping granite rock and exposed or concealed talus boulders are abundant. Comparatively heavy humus covers the forest floor in the coniferous types, particularly in the spruce - fir stands. This is usually intermixed with underlying granite boulders of irregular size and shape. The humus and matted tree roots have infiltrated deeply into the profuse boulders beneath, embedding them tenaciously. Knowledge of this condition is essential to a full understanding of the stubborn persistence of the fire deep in the ground, and of the great difficulties encountered in mop-up work and in attempts to dig fire lines where this condition obtained. The organic layer in the hardwood types consists of a few inches of leaf litter and duff. There the conditions affecting line construction and mop-up were less troublesome.

Before the fire, accumulations of the heavier fuels were essentially light in all forest types within those portions of the park involved, due to the extensive fire hazard reduction accomplishments under the Civilian Conservation Corps program. This favorable condition unquestionably reduced rate of spread after the blow-up subsided, lessened resistance to control, and consequently lightened the job of line clearance and mop-up.

Provisions for Fire Control in the Park

Considering the wild fire experience of the park during the decade preceding 1947 (see park fire record in appendix), physical improvements and equipment available for fire control were above normal requirements. On hand before the fire were a modern fire truck, five power pumps, hose and hand tools, in all sufficient to equip more than 200 fire fighters. The park has two fire lookout houses, one on Sargent Mtn., the other on Beech Mtn. Communication between these stations and park headquarters had been provided by telephone but service to Sargent Mtn. was inoperative at the time of the fire. Detection during fire seasons has been provided by manning one or both of the established lookout stations or one or more secondary points, depending upon degree of danger and visibility conditions.

As previously mentioned, accessibility for fire control is unusually well provided, due to the existence of an extensive system of paved roads, carriage roads, truck trails, old woods roads and foot trails. Park trucks, pick-ups and passenger-carrying vehicles were ample in number for ordinary fire control transportation needs. Commercial telephone service is available within short travel time from most parts of the island.

In addition to the extensive CCC fire hazard reduction accomplishments in the park, accumulations of logging slash and windfallen trees had been reduced as a further safeguard over a considerable acreage of private lands adjoining park boundaries. CCC forces also constructed many miles of fire-breaks along park boundaries. This work was done with respect to park tracts located mainly in the western part of the island, on Schoodic Peninsula, and along boundaries north and west of Aunt Betty Pond.

The park maintained a standard Southeastern Forest Experiment Station fire danger station. (This was destroyed by the fire, except for the rain gage which was located at park headquarters.) The station was operated during fire seasons and the observations obtained provided the basis for systematic rating and recording of fire danger conditions.

As regards personnel resources, the Acadia organization included 14 permanent and nine temporary employees at the time the fire started.

These positions are listed below by number and title.

Permanent Positions

- 1 Superintendent
- 1 Assistant Superintendent
- 1 Park Naturalist
- 3 Park Rangers (one of whom served as park fire chief)
- 1 General Maintenance Foreman
- 1 Maintenance Foreman
- 1 Automotive Mechanic
- 2 Laborers
- 1 Accounting Clerk
- 1 Clerk-Typist
- 1 Clerk

Temporary Positions

- 1 Tree Climber (Blister Rust Control)
- 3 Laborers

During the summer of 1947 the park had eight seasonal employees in the following positions: six seasonal Park Rangers, one Fire Control Aid and one Blister Rust Control Checker.

Fire control training for park and CCC forces was provided once or twice each year during the period from 1938 through 1942. ERA forces also received such training in the years through 1940, that program having been discontinued in the park the following year. These training sessions were from one to three days' duration and the major subjects included fire prevention, suppression methods and techniques, use of hand tools, power pumps, hose and water. One or more Acadia supervisory personnel attended

regional or sectional fire control training meetings conducted in other areas during the years 1939, 1940 and 1942. There was no fire control training in the park during the war years, 1943 to 1945. In May 1947 a three-day fire school was conducted in Acadia with the participation of the Chief Forester and a member of the regional forestry staff. It was attended by 29 park, Service and local cooperating personnel. The program was devoted almost entirely to instruction and practice in the use of power pumps, hose and water in forest fire suppression.

Acadia fiscal year allotments 1939 to 1946 for forest fire control purposes are summarized in the appendix. This summary shows that the average annual allotment of such funds to the park during the decade was \$827. Although since fiscal year 1942 only \$143 have been allotted to the park for forest fire equipment, the park has obtained considerable war surplus equipment during the past two years under the Service's authorization to procure such equipment by transfer without exchange of funds. Items obtained in this manner include a fire truck, trailer-mounted pump, and hose.

During the years of CCC activity in the park, fire lookout and fire guard services were provided from that source. From 1942, when the park lost its last CCC camp, until fiscal year 1947 the allotments provided for two fire guard or fire control aid positions each year. The authorized periods of employment varied from 2 to 4.5 months per year for each position. The amount approved for personal services in the 1943 allotment under Forest Protection and Fire Prevention was reduced to provide but one fire control aid for 4.5 months.

The park has a written forest fire control plan but it was out of date and in need of revision before the Mount Desert Island Fire occurred.

An analytical forest protection requirements report for Acadia was approved by the Acting Director on December 13, 1944. Copies of the park fire atlas are maintained in the park, regional and Director's offices. No formal cooperative fire control agreements with other agencies have been in effect but verbal understandings between the park and the organized towns on the island provide for cooperation on a mutual assistance basis.

The Towns of Bar Harbor, Mount Desert, Southwest Harbor and Tremont (see U.S.G.S. map for location and boundaries of each) are, collectively, in charge of fire control on private lands on the island. Practically all the villages have fire departments which vary in size from several trucks and several full-time employees down to one truck and one full-time employee. The full-time employees in these fire companies form the nucleus of the organizations, most of the membership consisting of volunteers. The latter represent a large portion of the able-bodied men in their respective communities.

Acadia National Park fulfills responsibility for the protection of all lands within park boundaries. To define the zone within which the park may take initial action on fires threatening park lands from the outside a fire boundary had been established around the park. This boundary, roughly paralleling the park line at distances varying from a few feet to one mile outside the park, follows roads, trails, streams and, in so far as possible, other physical barriers to fire. Initial suppression action is taken independently or cooperatively by park forces on fires occurring within this zone, since such fires are considered as directly threatening park lands. The Mount Desert Island Fire originated more than one mile outside of the fire boundary.

During the 19-year period 1928 - 1946 smokers accounted for 63 percent, incendiary 15 percent, debris burning 7 percent, and other human causes 9 percent of the total number of reportable fires within or threatening the park. No lightning fires are recorded in that period. The park fire prevention program has been less active since the years of CCC activity.

Forest Fire Danger Conditions

The period of danger from forest fires on the island is recognized as normally from April 15 to September 1, with a tendency to extend to September 15 in some years. It is, therefore, essentially a late spring and summer fire season. The extremely dry conditions prevailing during the summer and fall of 1947 caused a greatly extended and severe post-fire season emergency which continued well into the month of November.

The Mount Desert Island climate is characteristically cool in summer, with long periods of high humidity. During the spring and fall seasons the island is frequently blanketed with fog. Dry nights and protracted drought conditions have been of rare occurrence there. Bar Harbor precipitation records for the past 61 years (excluding 1941 and 1942) show a mean of 3.52 inches in August, 3.90 inches in September, and 4.43 inches in October. These figures are in sharp contrast with 0.55, 2.38, and 0.08 inches, respectively, for the same months in 1947 at Bar Harbor. The park fire record for the 1927 - 1946 decade reflects the mildness of the fire conditions during the years preceding 1947. In that decade a yearly average of less than 8 reportable fires burned 6.7 acres per year within the park. (See precipitation and fire records in appendix.)

The Weather Bureau presents the following pertinent analysis of the fire weather situation in New England for the month of October 1947.

"October, 1947, was a disastrous month for New England. In the middle of the month there was an outbreak of small brush and forest fires, many of which spread rapidly in the dry leaves and woods. On the 21st, serious fires developed, aggravated by strong northwest winds which were over thirty miles an hour in Maine. Thousands of acres of timberland were destroyed, as well as farms, houses, and summer cottages. Scores of people were made homeless, and power and light service was disrupted in many places.

"What were the causes of such tragic fires throughout New England? What influence, direct or indirect, did the weather have on the situation? Certainly the weather at the time helped to spread the fires that had started, and made the task of controlling them more difficult. Perhaps it had more to do with the entire fire situation than is apparent at first.

"During the three-month period from August to October, 1947, New England received only 56% of its normal amount of precipitation. That meant that everything was exceedingly dry, including the vegetation and ground cover. As the month of October progressed, the condition became increasingly worse. This was just the season when leaves were falling from the trees, so that before the end of the month the ground was well covered with tinder-dry leaves. Since everything was so dry, the slightest carelessness with matches, cigarette butts, or any kind of fire could easily ignite whatever was at hand; and any fire once started would spread rapidly. In addition, the long dry spell reduced the water supply to a seriously low level in many places; in some communities water had to be hauled from a considerable distance. The scarcity of water made the danger more critical if any small fires broke out.

"From the early part of October on, warnings of the fire hazard were issued daily through press and radio, together with appeals for everyone to exercise extreme care in the use of fire. The fire situation became more serious each day, and an outbreak of small brush and forest fires occurred on the 16th. On the 17th, some state and national forests were closed because of the fire hazard.

"On the 18th, the Boston Weather Bureau Office warned that the forest fire danger was very critical, and that the situation would become worse before it got any better. On the 21st of October a "dry" cold front swept across New England, bringing no precipitation, and ushering in an air mass whose relative humidity was about 20%. The already existing forest fires were aggravated by the strong northwest winds behind the front. This combination of wind, low humidity, and drought resulted in "blow-up" conditions, and fires raged out of control."

A Weather Bureau telegraphic summary for the week ending October 21 reported for New England: "Forest fire danger high; woods closed; many fires raging. Water shortage becoming critical; stream flow, wells, and reservoirs at lowest level in years." Issued by

Induced by these prolonged intensely dry weather conditions fire danger persisted in Class 3, 4 or 5 during the period from mid-September to November 8. There was no appreciable rainfall on the Island over a period of 65 days, from September 4 to November 8. The fire started (October 17) and was brought under control (October 27) during that period. A light trace of rain fell on October 29. Rainfall on November 8 and 9 amounting to 0.61 inches reduced fire danger considerably and contributed to complete blackout of the fire on November 14.

National Emergency

In recognition of this critical situation throughout the Northeast the Governors of New England's six states and the Governor of New York had, by October 22, declared a state of emergency, closing woods to the use of fire and general travel. On October 24 the President of the United States proclaimed the existence of a national emergency in the fire-distressed area. Such was the situation under which the Mount Desert Island Fire occurred, was fought and suppressed.

Origin of the Fire

As nearly as can be determined, the Mount Desert Island Fire originated at 3:20 p.m. on October 17, 1947 in or adjacent to a trash disposal dump known locally as "Dolliver's Dump," which is located on William Dolliver's place near the edge of Fresh Meadow. This location is outside of Acadia National Park, 1 3/4 miles west of the Lake Wood section of the park, and 2 3/4 miles north of the park boundary near the Eagle Lake Road, as shown on the fire map in the appendix.

Local residents pay the owner of the dump for the privilege of disposing of their rubbish there. The combustible material deposited in the dump is customarily destroyed by burning. However, even before the State Governor's declaration concerning the emergency, Fire Chief Sleeper of Bar Harbor Fire Department had prohibited outside burning operations within the township.

Specifically how the fire started has not been conclusively established, but except for the possibility of incendiaries the most plausible explanation is that there was some obscure fire or hot embers quietly smoldering in the dump which eventually kindled an active fire, or that perhaps burning

material was deposited there shortly before the fire broke out. The owner of the dump has assured Chief Sleeper that there had been no burning in the dump which would account for this fire. Chief Sleeper has stated that he had patrolled the vicinity by automobile one hour prior to the start of the fire and that he saw no evidence of fire in the dump then.

In a letter to the Attorney General dated December 29, 1947 the Secretary of the Interior directed attention to the great costs and damages to the Federal Government resulting from the fire and the manifest interest of the United States in recovering damages if personal responsibility for the cause of the fire can be definitely determined.

Suppression of the Fire

First Stage of the Fire - October 17 to 20

The first report of the fire was received by Chief Sleeper in Bar Harbor by telephone at 4:05 p.m. on Friday, October 17. A second report followed at 4:09 p.m. The Town of Bar Harbor Fire Department immediately sent a fire truck, portable pumper and four men. That force reached the fire at 4:13 p.m. and started direct attack with water equipment. Shortly afterward they were reinforced by the arrival of 16 additional men. The fire was travelling on the surface of the ground in the grassy flatlands of Fresh Meadow and into woods on the bordering slopes.

Chief Sleeper called upon Acadia National Park for assistance at 4:45 p.m. the same day, requesting a portable pumper, hose, and men. The park fire truck, loaded with 2 $\frac{1}{2}$ " and 1 $\frac{1}{2}$ " hose and two portable pumps, a dump truck and five men were dispatched from park headquarters at 5:45 p.m. The park crew and equipment remained at the scene of the fire all that

night and the next morning, pumping 14 hours, until the fire was considered thoroughly under control. By noon on October 18 hose had been extended and water applied entirely around the fire area, then approximately 100 acres. At about that time Chief Sleeper released all park personnel except two pump operators. The others returned to park headquarters subject to recall. The park pump operators, with relief, and the two pumpers served on the fire until the morning of October 20 when they were released by Chief Sleeper. The fire was under mop-up and patrol action from early morning on October 18 through October 20 under the direction of Chief Sleeper. It had not been declared out nor had an order to abandon it completely been issued.

Second Stage of the Fire - October 21 and 22

During the early morning hours of October 21 a strong northwest wind, it is believed, fanned into flame residual smoldering embers within the burn and threw fire across the established lines, causing it to break out with renewed force. The fire then advanced rapidly in a general southwesterly direction, crossing Crooked Road at approximately 7:45 a.m. Chief Sleeper sounded a general alarm at 8:00 a.m., requesting assistance from the park and neighboring fire companies on the island and mainland. He also telephoned Dow Field, Army Air Force base at Bangor, Maine, about 50 miles away, requesting immediate assistance through such men and equipment as could be supplied. Park forces were dispatched immediately, including trucks, pumpers and hose. They joined with Bar Harbor, other local fire companies and local residents in protecting buildings and in attempts to check the advance of the fire along Emery District Road. Suppression action was directed by the Bar Harbor Fire Chief.