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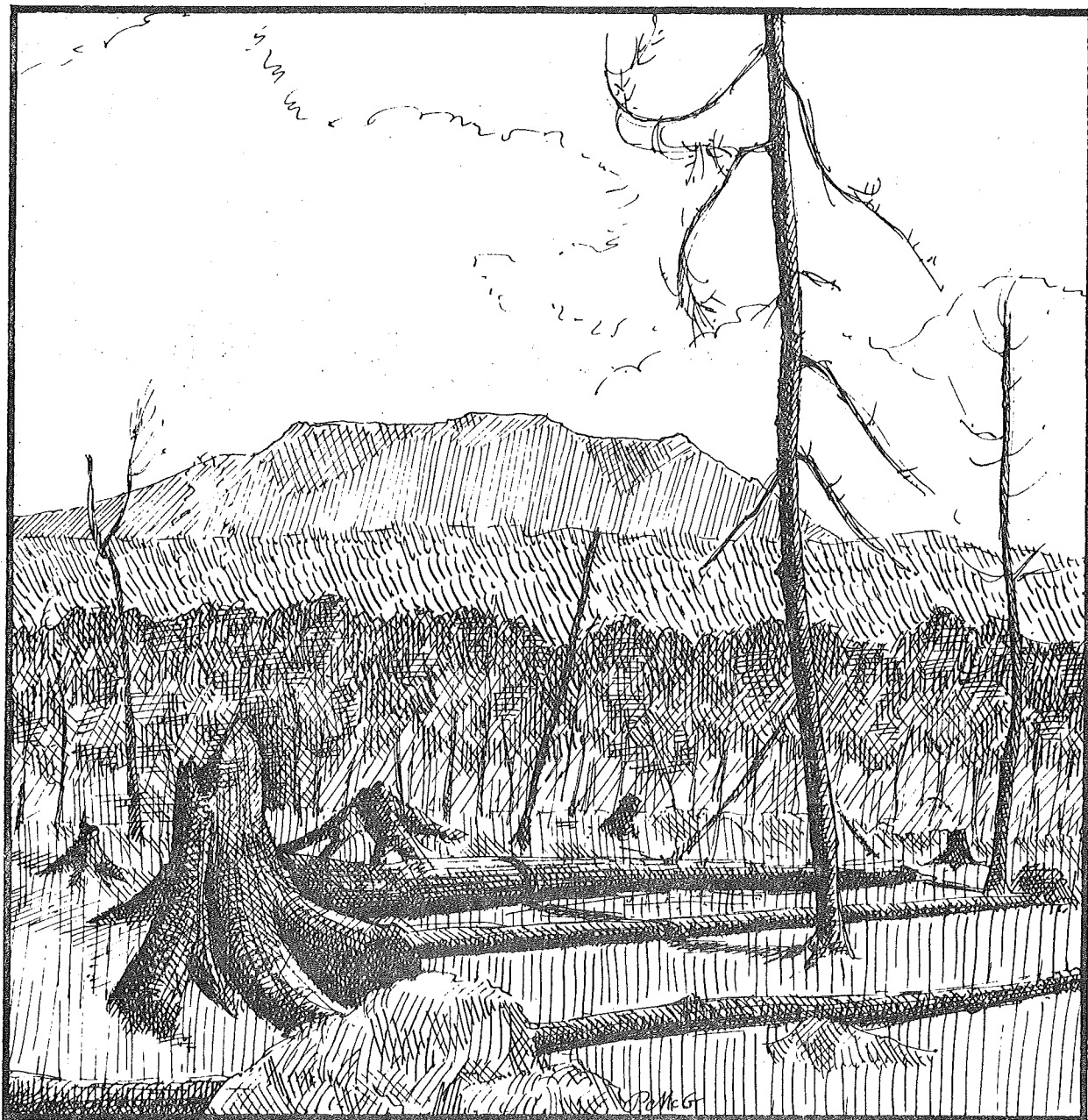
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# BAXTER PARK FIRE:

Report of the Review Board

September 1977



BOARD OF REVIEW  
BAXTER PARK FIRE

MAINE FOREST SERVICE  
DEPARTMENT OF CONSERVATION

SEPTEMBER 13-14, 1977  
MILLINOCKET AND BANGOR, MAINE

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## 1. Summary of Findings and Recommendations

The Board of Review for the Baxter State Park Fire was charged to establish findings of fact and develop recommendations on the cause, behaviour and development of the fire, the techniques and suppression equipment utilized, and the environmental impacts of the suppression action.

The fire was ignited by lightning on the evening of July 17, immediately increased in size and intensity during that night, and remained out of control for 14 days. The fire eventually burned 1900 acres on Baxter State Park and 1658 acres of Great Northern Paper Company lands.

The Board found that, in its suppression effort, the Maine Forest Service acted effectively and in a manner consistent with current statutory authority. A written, if limited, Baxter Park Fire Plan existed prior to the fire and was followed in the evacuation of endangered persons and in the suppression effort. Major factors contributing to the intensity and difficulty of control of the fire were (1) strong shifting winds, (2) heavy, dry fuels, (3) boggy and bouldery terrain, and (4) lack of existing access roads.

Recommendations by the Board include (1) an upgrading of heavy equipment and suppression aircraft available to the Maine Forest Service; (2) intensified training programs for fire fighting crews as well as fire overhead teams; (3) improved presuppression planning, to take account of local ownership patterns and specific land management objectives; (4) development of standard procedures for disseminating public information on forest fires; (5) placement of greater emphasis on the environmental impacts of fire suppression efforts; and (6) assurance that landowner management objectives and environmental impacts be

considered in the making of fire suppression strategy decisions.

Questions and further elaboration on the contents of this report may be obtained by contacting A. Temple Bowen Jr., Deputy Commissioner, Department of Conservation (207 - 289-2212), State House, Augusta, Maine or any of the Board members whose names and addresses are shown in Appendix A.

## 2. General Introduction

On September 13 and 14, 1977, the Baxter State Park Fire Board of Review met at the Airport Hilton Inn, Bangor. The Board was created and met at the request of Commissioner Richard Barringer of the Maine Department of Conservation.

The Board of Review was charged to establish findings of fact and develop recommendations as they pertain to four major areas of concern respecting the fire:

1. fire cause
2. fire behaviour and development
3. fire suppression techniques and equipment
4. environmental impact and fire ecology

Appendix A to this report includes a more complete description of the Board's purposes as well as the procedures established for the review.

The Board of Review and its staff met at Old Town on Tuesday, September 13, for purposes of flying to the fire location via Huey helicopter and observing first hand, both from the air and on the ground, the fuel types, terrain, topography, hydrology, and other relevant physical conditions. Unfortunately, the flight from Old Town was cancelled due to inclement weather. Instead, the Board drove to Millinocket where they flew over the burned area. In addition to the flight, slide presentation by Marshall Wiebe of the Department of Conservation, which depicted the conditions surrounding the fire gave the Board sound knowledge of these conditions.

The Board heard and reviewed extensive testimony by personnel of the Maine Forest Service, Baxter State Park, Great Northern Paper Company, and others (see Appendix A) on Wednesday, September 14 from 8:15 a.m.

until 3:30 in the afternoon. Some of this material is included in the Appendix of this report. Additional notes, tapes, and slides have not been attached to this report due to their great bulk. Persons interested in this additional information may contact A. Temple Bowen Jr., Deputy Commissioner, DOC, State House, Augusta (207 - 289-2212) and he will see that it is made available for review.



### 3. Fire Chronology

On Sunday evening, July 17, two lightning strikes were reported in the area of the perimeter road along the western side of Baxter State Park. The first fire, near Round Pond, was detected at 6:58 p.m. and was under control at 8:00 p.m. The second strike was reported at 7:55 and twenty minutes later a forest fire was reported by the Northern Region Patrol plane. It was burning in the "blowdown" in the vicinity of the lightning strike and was approximately three acres in size. By 8:45 p.m. the District Ranger began calling for personnel and equipment to suppress the fire. Regional Ranger (later Fire Boss) Roger Milligan, arrived at Abol at 10:05 p.m. and, after hiking through blowdown on a compass bearing, arrived at the fire at 11:45 p.m. He reported it to be 20 acres at the time, and burning briskly in blowdown.

In the meantime, Baxter State Park employees had initiated (8:45 p.m.) and completed (10:45 p.m.) the evacuation of all campers from the Abol, Katahdin Stream, Daicey, Kidney, Roaring Brook, and Y.C.C. camps. At 3:05 a.m., the campers from Chimney Pond were led safely out of the Park. The total number evacuated was 407 people.

On Monday morning, July 18, the Civil Emergency Preparedness feeding van served hot breakfast, water bombers were working the fire, and by mid-day there was a substantial fire fighting force assigned to the fire. In spite of the efforts of the available personnel and equipment, the fire ran before the 20 mph wind in a southeast direction, crossed the Park boundary into Great Northern Paper Company land at approximately noon, and burned some 1000 - 1200 acres of forest area during the day.

From Tuesday through Thursday noon (7/19 - 7/21) some additional 1000 acres burned. High temperatures, shifting winds, and heavy fuels contributed to the difficulty of control. Federal Disaster Assistance Agency funds were requested during this period because the "floor cost"<sup>1</sup> was to be exceeded and the fire was a threat to certain private property, particularly the Great Northern Paper Company power line from Ripogenuous Dam to Millinocket. Nonetheless, on Thursday morning, fire lines were 75% complete.

At Thursday noon, a predicted cold front arrived and the fire with its associated strong winds began to crown, jumping the established fire lines. Several crews were evacuated and 3 pieces of machinery were destroyed or severely damaged as the flames surrounded them. During Thursday afternoon and evening, many fire lines were lost and the fire nearly doubled in size with major losses on the east (Abot Mtn.) and west (west of Katahdin Stream) flanks.

Friday, July 22, saw prospects for completing the fire line looking better. The overhead organization was refined and bolstered by additional positions and the staffing of two full shifts (day and night). There were still many "hotspots" and the Foss and Knowlton Pond area now became the area of most concern.

The period of Saturday, July 23, through Sunday, July 31, when the fire was declared under control, was characterized by a smooth running fire fighting organization which responded effectively to hotspots, flare-ups, and equipment problems.

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<sup>1</sup> "Floor Cost" refers to a minimum fire suppression cost which must be exceeded by a single incident fire in order to qualify for FDAA assistance. Maine's floor cost for 1977-78 is calculated to be slightly less than \$123,000.

Demobilization was initiated on July 26. During the demobilization period, Baxter State Park staff, notably Forester Vladek "Kim" Kolman, utilized bulldozers that were on standby to alleviate some specific environmental impacts which would, had they not been corrected, have resulted in severe soil erosion and damage to the water quality of local streams, particularly near the confluence of Abol Stream and Abol Brook.

The Baxter State Park Fire has not been declared out at this date. The fire has consumed 1900 acres on Baxter State Park and 1658 acres on Great Northern Paper Co. lands. Estimated suppression costs, both direct and indirect, are \$745,000, with an anticipated reimbursement by the Federal Disaster Assistance agency of approximately \$400,000.

A great deal more factual information, including detailed testimony, fire maps, weather reports and forecasts, available resources and an overhead organization chart are included in Appendices B and C to this report.



4. Findings of Fact: The Board of Review, after inspecting the fire site and considering testimony, finds that:
1. The Baxter State Park Fire was caused by lightning, occurring at 7:55 p.m. on July 17, 1977.
  2. The Maine Forest Service, acting under current legal and statutory authority initiated, organized, and directed a strategically sound and effective fire suppression effort. Current policy requires immediate suppression of all forest fires.
  3. Factors contributing to the intensity and difficulty of control of the Baxter State Park Fire were primarily the presence of (1) strong, shifting winds, (2) heavy, dry fuels, (3) boggy and bouldery terrain and (4) lack of existing access roads.
  4. Fire boss, Roger Milligan, acted, on the evening of July 17, with initiative, courage, and skill in leaving the road, travelling cross country through blowdown to the fire site, and providing an accurate analysis of the fire situation.
  5. Forester, Vladek "Kim" Kolman, acted with singular good judgement and skill in evaluating potentially severe environmental impacts and taking prompt and effective action (while the fire was still going) to remedy the situation and alleviate the danger.
  6. The Baxter Park Authority had a written (if minimal) Fire Plan in effect and it was followed, within reasonable limits, in the suppression of this fire and the evacuation of those persons endangered by the fire.



## 5. Recommendations

The following pages of this report include recommendations that the Board feels to be pertinent and relevant to those issues that have been established as being within the purview of this Review. Each page addresses a specific recommendation and includes (1) a background statement supporting the recommendation (with reference to specific testimony where necessary); (2) the recommendation(s) itself; and (3) an assignment of which agency, group, individual, company, etc. has responsibility for taking action respecting the recommendation.

Board of Review  
Baxter State Park  
Fire

EQUIPMENT (Excluding Aircraft)

Background

Many types of heavy equipment, pumps, hose, back tanks, trucks, and tank trucks were used on the Baxter State Park Fire. Testimony repeatedly pointed out that there were many situations where the equipment was outdated, in poor condition, inadequate, or not suited to the conditions found on the fire.

Recommendations

- A. The Maine Forest Service prepare equipment maintenance and replacement schedules, and seek the appropriation of sufficient funds of the type and amount necessary to allow adherence to the schedules.
- B. That large bulldozers and skidders continue to be obtained through private contractors and companies.
- C. That continuing emphasis be put on company/contractor personnel for heavy equipment maintenance and job assignment.

Recommended Action by:

- A. Maine Forest Service  
U. S. Forest Service  
Maine Legislature
- B. & C. Maine Forest Service  
Industrial Landowners  
Contractors



## AIRCRAFT

### Background

The use of aircraft for both direct suppression and logistical support has proven to be extremely effective on forest fires in Maine. Current aircraft in the Maine Forest Service are from 16-26 years old. Primary emphasis is placed upon fixed wing suppression aircraft (Beavers) in spite of the general consensus that Huey helicopters are more effective and flexible suppression tools.

In-house aircraft resources are insufficient for large scale suppression projects. Outside aircraft sources may be (1) unreliable due to other priority uses, or (2) impractical because they are wheeled planes dependent upon land-based water supplies not readily available in Maine. (Maine has traditionally used its lakes and rivers as the primary source of water for fire suppression.)

The National Guard has the capability of providing logistical rotor-wing aircraft support when directed to do so by the Governor or his designee.

### Recommendations:

- A. The Maine Forest Service should upgrade their current air attack equipment to newer, rotor-wing aircraft to include at least three operational Hueys.
- B. A cost-benefit analysis should be made of the ownership of one CL-215 aircraft, to be shared regionally for fire suppression.
- C. An arrangement should be made with the National Guard to provide logistical support aircraft, at the request of the Maine Forest Service, and to afford necessary training for National Guard personnel.

### Recommended Action by:

Maine Forest Service  
U. S. Forest Service  
Maine National Guard  
Maine Legislature

ORGANIZATION

Background

It was evident that a fully effective overhead suppression organization did not materialize on site until Friday, July 23. The establishment of this improved organization enabled the Maine Forest Service to apply its available resources in an efficient and effective manner.

Recommendation:

The creation, development, and continued training of multiple fire overhead teams which can be assigned and dispatched to project fires throughout the State on short notice.

Recommended Action by:

Maine Forest Service

## TRAINING

### Background

Considerable testimony by the Great Northern Paper Company and the Forest Service addressed the matter of training. The lack of trained crews, project fire experience among Rangers, trained pump operators, dozer specialists, etc., indicate the need for a renewed emphasis on both in-service and outside training.

### Recommendation:

1. Expand and formalize the training of organized, available crews outside the Forest Service for assignment to fires as and where needed.
2. Increase the frequency and intensity of in-service training for Rangers, including such techniques as on-the-job training through double staffing on project fires, the Ranger Academy, and other proven effective training programs.
3. Reinstigate spring meeting between Maine Forest Service Fire Control staff and supervisory personnel of landowners with emphasis on training landowner personnel in administrative and overhead fire organization positions.

### Recommended Action by:

Maine Forest Service  
Industrial Landowners

Board of Review  
Baxter State Park  
Fire

PRESUPPRESSION PLANNING

Background

Maine's history of forest fire occurrence and severity is cyclical and this characteristic pattern must be recognized by the Legislative and Executive branches of State government as well as others. Presuppression planning and the maintenance of a high level of preparedness is extremely important and more difficult to accomplish under these conditions. Testimony pointed out that certain elements of the presuppression planning efforts need strengthening.

Recommendations:

1. Better coordination between the Maine Forest Service, other public agencies and landowners is needed and the M.F.S. has the responsibility to take the lead in this area.
2. Presuppression planning for areas such as Baxter State Park must take into consideration the special or unique management objectives of the owner/manager as well as the policy/strategy considerations of the Maine Forest Service.
3. The Baxter State Park Fire Plan should be updated and elaborated prior to the 1978 fire season, after close consultation and coordination with responsible staff of the Great Northern Paper Company, other abutting landowners, and the Maine Forest Service.
4. This fire Plan as well as others should be reviewed and updated annually in conjunction with the annual spring training sessions.

Recommended Action by:

Maine Forest Service  
Baxter State Park  
Landowners

Board of Review  
Baxter State Park  
Fire

PUBLIC INFORMATION

Background

Information about the Baxter Park Fire, during its initial stages, was sketchy and inaccurate. In addition, the presence of representatives of the various media in the fire headquarters and the lack of a single source of fire situation information reduced the effectiveness of the fire overhead in carrying out their prime responsibilities. These deficiencies were essentially resolved following the assignment and activation of a Fire Information Officer at the fire headquarters.

Recommendation:

A standard operating procedure be established for the training, assignment, and operation of a Fire Information Officer on every project fire.

Recommended Action by:

Maine Forest Service  
D.O.C. - Information & Education Section

## ENVIRONMENTAL IMPACTS

### Background

The construction of bulldozed fire lines and access routes in a fire suppression action may create substantial environmental modification or degradation to the site. It is recognized that certain actions are essential if effective forest fire suppression action is to be taken. On the other hand, consideration of the environmental impacts of these actions may be made during the suppression period and either avoided, modified, or corrected at little cost and with acceptable suppression results.

### Recommendations:

1. On a going fire, M.F.S. fire control staff, landowners, S.C.S. personnel and other available trained personnel shall consider the environmental impacts of alternative suppression actions and minimize adverse effects consistent with effective fire suppression and the safety of firefighting personnel.
2. Develop a policy establishing who has the responsibility for repairing damages due to forest fire suppression activities.
3. Train M.F.S. Fire Control personnel regarding the environmental impacts of fire suppression activities.
4. Place greater emphasis in forest fire presuppression plans on anticipated environmental impacts.
5. Hand line construction should be recognized as a viable and desirable technique under certain conditions, such conditions to be developed by the fire staff of the Maine Forest Service.

### Recommended Action by:

Maine Forest Service

## FIRE SUPPRESSION STRATEGY

### Background

Forest fire suppression strategies are defined as the ways that forest fires are extinguished or otherwise controlled. The Maine Forest Service staff, under the direction of a Fire Boss, is responsible for the selection and application of these strategies and techniques on any given fire.

A variety of factors affect the decisions about how a fire is to be controlled. Many of these decisions are made "on the spot" under great pressures of time, limited resources and incomplete information. Traditionally, fire suppression personnel have based their actions on criteria relating primarily to technical fire fighting considerations, with the basic objective of controlling the fire in the shortest period of time with the least acres burned and at the least cost.

### Recommendations:

1. The best possible information must be provided to the Fire Boss. The scouts who are assigned to provide this information should be selected on the basis of their familiarity with local conditions as well as their fire control training.
2. All Maine Forest Service fire control staff should be trained to consider such criteria as suppression costs, environmental impacts, land management objectives, and land use plans (as well as technical fire suppression factors) while making fire control strategy decisions.

### Recommended Action by:

Maine Forest Service