An Overview of the 1987 Wallace Lake Fire, Manitoba

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Wallace Lake is located in eastern Manitoba approximately 160 kilometers (100 mi) northeast of Winnipeg. The surrounding area is comprised mainly of mature jack pine and black spruce stands and is a popular location for summer cottage developments. Spring fires in this area are not uncommon, but the 1987 Wallace Lake Fire was one of the most devastating wildfires in modern times. It also has special significance for two main reasons. First, it was the first campaign fire in Manitoba during which the Canadian Forest Fire Behavior Prediction (FBP) System *(1)* was used operationally to forecast probable fire behavior on a near real-time basis. Second, the fire produced one of the worst wildland/urban interface incidents in the province's recent history.

The Wallace Lake Fire started on Tuesday, May 5, and by May 13 reached its final size of 20,850 hectares (51,520 acres). The winter of 1986–87 was unusually warm and much of the fire area experienced below normal precipitation. Snowmelt occurred rather rapidly in early April due to a strong and persistent upper ridge pattern over the area that produced record maximum temperatures on numerous days. Total precipitation following snow free cover was minimal. Four weather stations in the general area reported an average of only 3.4 millimeters (0.13 in) of rain. The combination of these factors contributed significantly to the low moisture content of the dead forest fuels and in part to the extreme fire behavior that occurred during the first half of May 1987.

The majority of the area burned by the Wallace Lake Fire was the result of three separate runs, which took place on May 5, 8 and 12 (fig. 1). The primary cause of these major fire runs was the strong surface winds associated with the passage of three successive cold fronts. Average wind speeds were in excess of 30 kilometers per hour (19 mph) on each of these days, with gusts up to 60 kilometers per hour (38 mph) being reported. Minimum relative humidities ranged from the high teens to low thirties, and maximum air temperature varied from 23 °C (73 °F) to 32 °C (90 °F).

The FBP System was used to predict potential fire behavior (e.g., spread rate and type of fire) and proved to be a valuable asset to the overhead team assigned to the fire. The fire spread projections were sufficiently accurate and reliable to be a major factor in determining evacuation requirements. For example, on May 8 the fire jumped the established control line and raced eastward towards the subdivision on the west shore of Wallace Lake at a rate of 3.9 kilometers per hour (2.4 mph). A lodge, campground, and 54 of 69 cottages were either damaged or destroyed by this fire (fig. 2). However, no lives were lost, because of the precautions taken by the overhead team.

The extensive property losses at Wallace Lake coupled with the $2.26 million fire suppression costs made the Wallace Lake Fire one of the most expensive wildfires to be fought in Manitoba. This fire did, however, illustrate the value and usefulness of

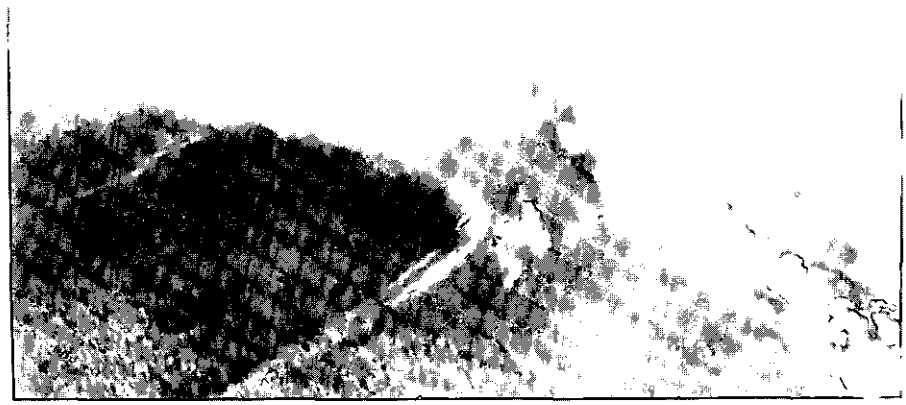
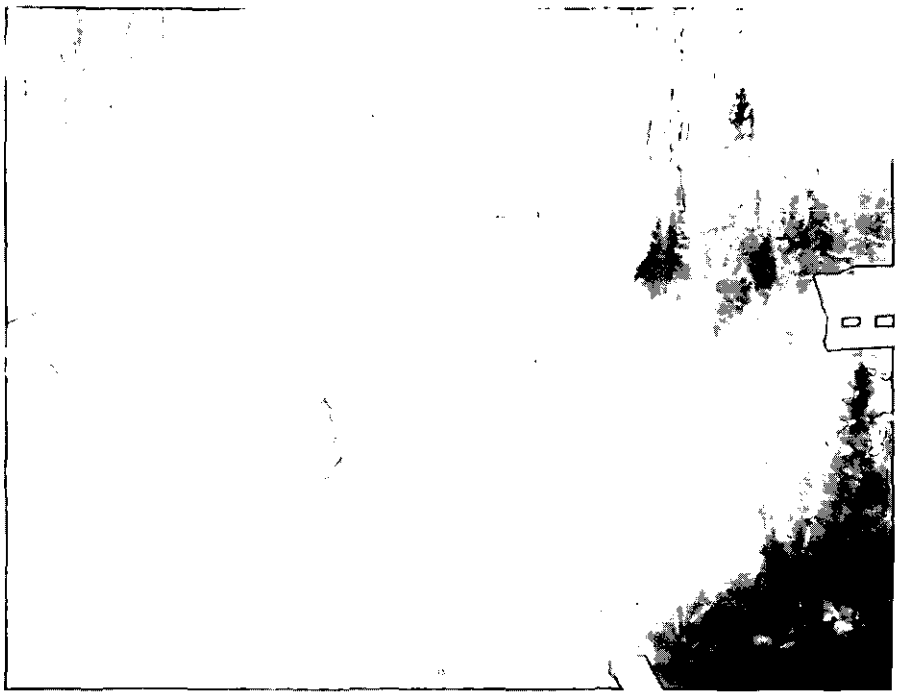


Figure 1—*The Wallace Lake Fire during the initial stages (around 1500 CDT) of its major run on May 8, 1987 (photo courtesy of Manitoba Natural Resources).*



the FBP System on a going fire and showed the potential consequences that many of the other cottage subdivisions in this general area could possibly face in the future. ■

Literature Cited

1. Lawson, B.D.; Stocks, B.J.; Alexander, M.E.; Van Wagner, C.E. A system for predicting fire behavior in Canadian forests. In: Donoghue, Linda R.; Martin, R.E., eds. Proceedings of the Eighth Conference on Fire and Forest Meteorology; 1985 April 29–May 2; Detroit, MI. Society of American Foresters Publication 85–04: 6–16 Bethesda, MD: Society of American Foresters; 1985.

Figure 2—*Aftermath of the Wallace Lake Fire at the shoreline cottage subdivision on May 8, 1987 around 1800 CDT (photo courtesy of Manitoba Natural Resources).*

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Cover: Gene Benedict, Branch Chief, Fire Management and Recreation, stands before McCall Smokejumper Base, on Payette National Forest, ID. See story on **p. 33.** (Photo courtesy of Eric Bechtel, *Central Idaho Star News.*)