



Protection Branch Ministry of Forests

Fire Review Summary for the McLure Fire (K20272)

Fire Number:	K20272	Fire Name:	McLure
Date of detection:	July 30, 2003	Final size:	26,420 ha
Total cost:	\$31.1 million (est.)	Total damage:	TBD

Background

This fire occurred in the southern interior of British Columbia, extending northwest from the community of McLure past the town of Barriere. Our investigation indicates that a discarded cigarette was the possible cause of this fire. The weather forecast for the Kamloops Fire Centre (Centre) on July 30th predicted temperatures ranging from the low 30's to near 40 degrees Celsius and sunny weather with afternoon wind gusts to 30 km/hour in the valleys. There was also a slight risk of thunderstorms late in the afternoon with the potential of wind gusts up to 60 km/hour. Table 1 shows the weather indices for July 30 as per the Sparks Lake weather station - all Fire Danger Ratings are in extreme. The Kamloops Fire Centre had issued an Open Burning Ban that had been in effect since June 15th, 2003.

Table 1. Weather Indices

Temp.	RH	Wind Dir.	Wind Speed	Precip.	FFMC	DMC	DC	ISI	BUI	FWI
34.4	10	304	7	0.0	97.9	226	899	18.2	277	58.0

FIRE ZONE SITUATION

The Kamloops Fire Zone (Zone) was working under a preparedness level of 3C at the time of fire ignition. The preparedness sheets indicate that the following resources were on standby for the Zone:

- six Kamloops and two out-of-province (Alberta) initial attack crews
- four Forest Protection Officers
- two dozers
- three water tenders
- one medium helicopter.

Seventy fires had occurred in the Zone as of July 30 with twenty of these fires still burning. Three new fires were ignited on July 30th. The Strawberry fire (K20298) ignited on the periphery of Kamloops two days following the start of the McLure fire.



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FIRE CENTRE SITUATION

The Centre had a total of 281 fires by July 30 with 82 of these fires still burning. Moreover, the Anarchist (K50195) and Sicamous (K30236) fires were still using considerable resources. Additionally, two new major fires ignited two days after the start of the McLure fire (K20298 and K40300). Thirteen new fires started on July 30th.

The Centre was working under a preparedness level four. The Centre had the following resources on standby:

- three dispatchers
- three communication officers
- two logistics personnel
- one plans person
- two radio technicians
- nine support staff (air, tactics, liaison, radio operator and weather).

PROVINCIAL SITUATION

By July 30th, 921 fires had occurred in British Columbia. Of these fires, 198 were still burning and 9 of these were considered major fires. The province was also closely monitoring the status of three out-of-province (USA) fires that had the potential to move into British Columbia.

The province was working at a preparedness level four and, as of July 31st, the only crew resource available was one unit crew. One day prior to the ignition of this fire, the following resources had been requested from out-of-province: six divisional supervisors, two air branch directors, six unit crews, two fire behaviour specialists and one fire management team. Additional resources were requested on July 31st including 16 initial attack crews, two Type II fire management teams and two incident management teams.

The provincial weather forecast indicated a front approaching on the evening of July 30th. Due to the front, there was a 20% chance of lightning. The relative humidity was 10% for the southern portion of the province. The weather forecast also indicated that the warm weather was going to be coming to an end.

Fire Start and Response

This fire was ignited at approximately 12:40 on July 30th. The first report came in at 12:55 from the Kamloops Fire Department 911 Dispatch. The general public provided the second report at 13:02. Two initial attack crews were dispatched from Kamloops via a medium helicopter at 13:14. The Kamloops Unit Crew Leader and two squads were redirected from fire K20268 to the McLure fire at 13:22.

The initial fire report lacked detail and due to the close proximity of the fire to the Airtanker Base, a bird dog aircraft was dispatched to the area. The Air Attack Officer immediately requested tanker action upon seeing the smoke while approaching the fire. Tanker action was



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continuous from 13:47 to 21:10 that evening and 386,553 litres of retardant were dropped on the fire on the initial day. The aircraft grounding time for the day was 21:32 while daylight the next morning occurred at 04:44.

The initial fire reports from the Air Attack Officer and Initial Attack Crew Leader advised that the fire was 0.5 hectares in size, showing rank 1 and 2 behaviour and burning under a power line. The wind speed was calm upon arrival (13:28). By 15:09, increasing winds as well as an increase in the slope (65%) in the area the fire was now burning had a significant impact on the fire.

The purpose of the air tanker request was to protect life and property. Therefore, the first tanker drops occurred not at the head of the fire but between the down slope buildings and the fire.

The resources committed to this fire at the end of the first day were as follows: 87 firefighters of which 45 worked through the night, 4 helicopters, 5 dozers, 2 excavators and 3 water tenders. The rapid growth of this fire on the first day can be attributed to the steep terrain, heavy fuel loading and drought conditions in the area. Fire size was estimated at 195 hectares at the end of the first day.

SIGNIFICANT EVENT AND CHALLENGE DURING THIS TIMEFRAME

Unified command was not established. This led to challenges with respect to organization and responsibilities. Currently, there is no mandatory training for ICS and unified command in the province.

Expanded Attack

After continuing suppression efforts throughout the first night, the assessment at daylight was that the fire could potentially be contained on the second day. The fire was 80 to 85% guarded and showing rank 2 fire behaviour. An inversion also occurred on the second day. However, at 14:00, a significant weather cell passed through Kamloops. At 15:00, this weather cell arrived at the fire, contributing to an escape of 15 to 20 hectares on the northeast corner. Wind speeds were estimated to be 50 to 60 km/hour. Due to the fire activity, crews and industry personnel were evacuated from the northeast corner and air tanker action was required to protect the structures in the area.

Fire intensity continued to escalate and the fire moved to the north and east, subsequently headed up the North Thompson River. From this point, until 14:30 on August 1st, the fire moved up the North Thompson River to the communities of Louis Creek and Exlou. The fire had grown to 3,400 hectares in size. This progression caused the following significant events to occur: the North Thompson highway was closed, hydro services were lost for the North Thompson and evacuation orders were put in place to the all areas south to the Agate Bay road. This fire progression was caused primarily by the isolated incident of the weather cell in the afternoon of July 31, the drought conditions of the season and the canyon terrain.

A command team replaced the Ministry of Forests' initial attack and zone staff at 20:00 on July 31. Throughout the night, the incident command post was established in Barriere. At 01:30 on August 1, embers from the fire started to drop into Barriere. The highways



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maintenance contractor worked through the night trying to clear the debris that was falling on the highway as a result of the fire. Fire activity throughout the day and night was rank 3 to rank 6. Resources committed to the fire at the end of the second day consisted of 100 fire fighters, 45 of them working through the night, 4 helicopters, 9 dozers, 2 excavators and 5 water tenders working in conjunction with the McLure and Barriere Fire Departments.

During the afternoon of August 1, 73 homes and a major sawmill were destroyed. During this time, air tankers were being used for structural (homes, etc.) protection. Due to another significant wind event and poor visibility due to smoke, all aircraft were grounded as of 15:02. On the afternoon of August 1, a fireguard was established at the south end of Barriere. The guard ran north along the east side of Barriere. The burn off action in conjunction with the fireguard construction assisted in minimizing the losses in the community of Barriere.

Fire activity remained aggressive throughout August 1st and the estimated fire size was 6,629 hectares at 22:00. Resources on the fire: 121 fire fighters, 9 dozers, 7 skidders, 3 excavators and 6 water tenders along with the local fire departments.

SIGNIFICANT EVENTS AND CHALLENGES DURING THIS TIMEFRAME

- Four evacuation orders are issued on August 1, expanding from McLure north to Little Fort.
- The fire management team's incident command post in Barriere was evacuated at this time. The escape route for the team was north from Barriere through 100 Mile House and back to Kamloops.
- The fire management team's efforts were impeded by the following series of events. The loss of hydro, radio repeaters and the command post evacuation under threat from fire all negatively impacted communications. Ground access from the north end of fire to the south end of fire was also affected. The team had to re-establish the command post from Rayleigh and was shortly thereafter evacuated from Rayleigh due to the Strawberry fire (K20298).
- Industry and local people were dispatching their own equipment and fighting the fire without direction from the Ministry. This resulted in people and machinery being placed in dangerous situations and presented a challenge to the Ministry with respect to tracking both personnel and equipment on the fire.
- This fire was not being run under a unified command.
- The EOC site was in Kamloops and all communications went through the Fire Control Officer at the Kamloops Fire Centre.
- Due to other fire activity in the province there was a shortage of qualified individuals to fill key positions within the fire management team, specifically branch directors and division supervisors.

From August 3 to 6, the fire expanded to the east and north with some minor progressions to the south in the east branch. At 03:00 hours on the morning of August 6th, the fire was estimated to be 16,640 hectares in size. Organization was established with the achievement of



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control over the local residents using their own equipment on the fire. Additionally, requested resources also started to arrive.

On August 6, the second turnover of command occurred with the addition of a long team consisting of 18 members. This team was aware of the complex nature of the fire with respect to its rapid progression, interface issues, and the continued complications caused by the weather forecasts and fire build-up indices. As a result, there were no expectations of any real changes in conditions from the previous days.

The team initially experienced the same problem as the previous team in terms of industry and contractor equipment working without Forest Service approval or direction. By August 13, though, most of the equipment had been located and was brought under the supervision of the Forest Service. Daily objectives were met and standards of safety and commitment were established.

The McLure fire continued to grow daily. From August 6 to 10, an inversion made operational flying on the fire line dangerous.

6 AUG – 10 AUG: SIGNIFICANT EVENTS AND CHALLENGES DURING THIS TIMEFRAME

- The fire grew in size to 25,811 hectares during this time and no further structures were lost.
- A decision was made that public smoke reports within the perimeter of the fire would be actioned only if jeopardizing the fire suppression objectives.
- The camp moved from Rayleigh to Barriere during the period from August 8 to 10. Over this period, Barriere camp increased to over 800 people and experienced the logistical problems associated with a rapid expansion. Security, communications, staffing and contract administration of food services were significant challenges that the camp faced. During this period, with no sources of power in the town and a number of Barriere residences still evacuated, the camp was providing meals for the machine operators and local workers.
- The short turnover time between the fire management teams was an issue, given the complexity and the rapid rate of growth of the fire. Problems were identified in the tracking and financial management of resources. This was compounded by the rapid progress of the fire during the first five days and local fire suppression actions taken by residents.
- The interface branch (resources to suppress structural or house fires) grew rapidly and peaked with 40 fire trucks involved. The interface component never became a unified command and problems arose with duplicate supply lines created by parallel logistics.
- Communications to other branches at the management level could be improved.
- Significant concern was created with a fire from the Cariboo Forest Region, within the vicinity of Bonaparte Lake, considering the potential of this fire to join with the McLure fire. Consequently, contingency guards were constructed with the aim to keep the two fires separate. The numerous fishing lodges in the area were at risk and sprinkler systems were established at these sites, as evacuations were ordered.



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- Industry individuals on the fire were not trained or certified for incident command positions and were therefore utilized in other functions. This may have contributed to the comment that industry personnel were underutilized.
- Resource requests were filled to the best of the ability of the Kamloops and Provincial Fire Centers. More Type 1 unit crews were requested than were available.
- The military presence grew to 400 personnel. Of these, 180 actually worked on the fire line while the remainder held support positions. The values that the military brought to the command structure was as follows: seasoned leaders, a similar hierarchy, supervision and discipline. The military was self-sufficient as they had their own camp and the ability to transport their own crews; this was key as it removed some of the logistical pressure from the fire management team. However, the military could have been utilized at a higher level had they been able to participate in more significant training rather than the one or two day course.
- Danger tree assessing and dangerous tree snag falling were issues at several times in that it delayed mop-up activities and caused escapes from the added fuel loading of falling dangerous trees. The coordination between guard construction, burn off and danger tree assessing and snag falling was an issue.
- Throughout all three geographic branches of the fire, mop-up activities commenced as containment and control occurred.
- Establishing land use agreements with absent/evacuated landowners and commencing Forest Service suppression efforts on private land were two significant issues on this fire.
- The shortage of trained branch directors and division supervisors was a considerable concern. More trained personnel would have improved the McLure fire in the following ways: communication could be improved while fighting the fire, objectives would be better met and there would be greater access to actual fire fighting skills such as those required in burning off.

From August 23 to September 4, the fire increased moderately in size to 26,345 hectares, very close to its final size. Fire line and support activities progressed on a routine basis. Earlier problems of unsigned equipment, manpower and land use agreements were resolved. The fire management team personnel rotated for days of rest with a planned departure of senior members of the team on September 4. A product of the large original team was that turnover of the fire was to members of the same team resulting in a smooth, seamless transition.

23 AUG- 4 SEP: SIGNIFICANT EVENTS AND CHALLENGES DURING THIS TIMEFRAME

- The final evacuation orders have been rescinded.
- Contract crews were rotated from one project fire to another without having had the mandatory two days off. It was impossible to track this non-compliance at the fire level.
- The WCB inspection of the fire occurred but no infractions were identified.



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- Management of crew roll over days and replacement of crews rolling over was a challenge because of the sheer number of crews and concern for the impact on continuity.

From September 4 to 17, fire suppression activities continued in the north branch while the south and east branches were deemed to be contained. Within this time period, manpower on the fire line was reduced from 700 to 70 personnel. Even though there were short isolated periods of rain and the burning window was decreasing on a daily basis, there was still significant concern with respect to containment. The fire weather indices were still high and an isolated wind event could have caused major escapes.

4 SEP – 17 SEP: SIGNIFICANT EVENTS AND CHALLENGES DURING THIS TIMEFRAME

- Sprinkler systems on houses in the Boulder Mountain area were removed, as fire activity in the area did not warrant keeping them; however, local public pressure and concern by some residents resulted in the reinstallation of the systems.
- The rehabilitation branch was established.
- Manpower and equipment on the fire was reduced with respect to fire line and support.
- The military was released from the fire. This release was smoothly coordinated and did not negatively impact fire suppression activities.
- Appreciable amounts of rain fell on the fire.

Rehabilitation

Three hundred and sixty-five kilometers of fireguard was constructed on the McLure fire. Twenty-eight kilometers of this fireguard was constructed on private property. In excess of 80 parcels of private property were impacted by suppression activities on this fire. Rehabilitation activities commenced on September 12 and ceased November 29. Further rehabilitation will occur in the spring of 2004. Fire suppression damage in riparian areas was deemed a high priority and prescriptions have been written, approved and implemented. Of the 365 kilometers of fireguard, 310 kilometers have been rehabilitated thus far.

The planning of timber salvage operations commenced during this time period and continues under several forms of tenure.

SIGNIFICANT EVENTS AND CHALLENGES DURING THIS TIMEFRAME

- The private land rehabilitation coordinator arrived on the fire on August 25. Consideration should be given to the commencement of coordinating private land negotiations sooner on fires of this magnitude and complexity.
- More initial work and detail needs to be put into the private land use agreements to clarify rehabilitation expectations and costs up front.



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Other Agencies

Multiple agencies were involved in this fire and could have operated better as a unified command. Communications at the local operational levels were good as people from different agencies met and conferred on a daily basis to discuss objections and implementation. Although no formal process was in place, local agencies did attend the daily command meetings as issues arose.

Because no direct communication link was established between the IC and the EOC, information was misinterpreted or not passed along the communication channels. This impacted logistical effort as supply lines were often duplicated, increasing unnecessary demands on supplies.

KEY RESOURCES

The military provided four hundred persons and were a valuable asset in fighting this fire. Once the military's capabilities became known, they became a self-sufficient unit, providing their own camp, transportation and supervision.

With respect to the interface suppression activities, the Barriere fire department and other supporting structural fire departments provided valuable assistance. However, the initial lack of knowledge with respect to the incident command system and the lack of adequate gear to fight an interface wildland fire impacted the initial effectiveness of some of the fire departments.

Challenges

1. The short transition period between fire management teams on a fire of this complexity. Longer transition would ensure that incoming teams are fully cognizant of the fire objectives and that financial controls are in place and current. Increasing the transition period would also lead to increased efficiencies and a more professional image of the Protection Branch's abilities and skills being portrayed to the general public and other resource users.
2. The shortage and limited size of fire management teams. Fire management teams should be able to adjust their size based on the complexity of the fire that they are attending.
3. The availability of certified personnel. The partnership agreement between Protection Branch, Forest Districts and Regions should be revisited with respect to number of staff, currency of staff training and certification.
4. The certification of out of province crews. On a national level, qualifications with regard to fire line positions and crew capabilities should be standardized to the degree possible.
5. Lack of unified command with local structural firefighters. For fires of this complexity, the unified command structure should be followed and standard operating procedures need to be developed for all response agencies. All response agencies should have ICS training.