



## Protection Branch Ministry of Forests

### Fire Report Summary for the McGillivray Fire (K20627)

Fire Number:	K2-0627	Fire Name:	McGillivray
Date of Detection:	August 15, 2003	Final Size:	11,400 ha
Total Cost:	\$25.7 million (est.)	Total Damage:	TBD

### Background

The McGillivray fire, caused by lightning on August 15, 2003, was situated north of the communities of Pritchard and Chase, 35 km east of Kamloops, B.C. The weather was extremely hot and dry for the past several weeks. Winds were forecasted to gust from 50 - 70 km per hour near thunderstorms in the area. There was an open burning prohibition in place for the entire Kamloops Fire Centre as of June 15, 2003. Since the fire started late in the evening of August 15<sup>th</sup>, the following fire weather indices table is outlined for August 16, 2003 at 1300.

#### Turtle Weather Station

Temp	RH	Wind	Precip	FFMC	DMC	DC	ISI	BUI	FWI	DGR Class
30.8	19	8 km/h (east)	0.0	96.9	188	874	16.7	245	54.8	5

### Kamloops Fire Zone Situation

The forecasted hot, dry weather proved to be accurate. The preparedness level was 3C and the resources on standby in the Kamloops Fire Zone were:

- PAB (primary attack base) supervisor
- 6 initial attack crews
- 3 tank trucks
- 1 D6 cat
- 1 TD8 cat
- 2 low beds
- First, second, third and fourth Fire Protection Officers on standby
- 3 contingency (partnership) staff

As of August 15, the Kamloops fire zone had taken action on a total of 115 fires during the season. Two new fires started on August 15 - a total of 53 fires were still burning. The Venables fire K20624 (7636 ha) started the same day, and the McLure fire - K20272 (26345 ha), the Vermillion fire - K20436 (3981 ha) and the Strawberry fire K20298 (5730 ha) were still demanding considerable resources.



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### Fire Centre Situation

The Kamloops Fire Centre had taken action on a total of 626 fires up to August 15 with 8 new fire starts on this date. Total fires still burning in the Kamloops Fire Centre were 398. Other major fires were K20624 (Venables) started on this day, K20436 (Vermillion) (still using resources), K20272 (McLure) (still using resources), K20298 (Strawberry) (still using resources), K40300 (Cedar Hills), and K50195 (Anarchist).

### Provincial Situation

The province had taken action on a total of 2,063 fires as of August 15, with 866 still burning. Twenty-four new fires started on that day. The province was working at a preparedness level of 4. Resources were depleted with no Initial Attack Crews or Unit Crews available for re-deployment from other parts of the province. Resources deployed during the term of this fire included:

- 20-person Type 1 Unit Crews
- Fire Management Teams (FMT)
- Fire Behavior Specialist (FBANS)
- Division Supervisors
- IC Type 1 and 2
- Rotary Wing Bird Dog Officer (RWBDO)
- First Nations
- Military
- Emergency fire fighters
- Contract fire fighters

### Fire Start and Response

The detection date and first report was August 15 at 22:00 hours as indicated by the Initial Phone Report # 22722.

On August 15 at 22:09 hours, the Kamloops Fire Centre dispatched IA H25 (Initial Attack Crew) to the smoke reported near Pritchard. They were unable to locate smoke since the fire was reported by the public to be 10 km west of Pritchard instead of the actual location that was, in fact, east of Pritchard.

22:40 - IA crew 5H24 rolls to support 5H25

The chronology of events, starting in the early hours, for August 16 was as follows:

00:06 - Subsequent phone report correctly identifies location of fire.

00:18 - IA crew 5H25 rolls again to check fire report east of Pritchard Bridge.



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- 01:13 - IA crew (H24) was dispatched to McGillivray to join with Adams Lake fire department which had a visual on the fire, but there was no road access.
- 01:22 - IA crew (H25) spotted the fire from the south side of the Thompson River on the Trans-Canada Highway #1 when trying to find access. The fire was estimated to be 3-4 ha with windy conditions and there was a concern that the fire could be a problem later in the morning.
- 04:08 - An Air Tanker request was faxed to the Tanker Base as a priority fire.
- 07:44 - P27 completed a reconnaissance of fire K20627 – reported it was 12-15 ha, rank 2.
- 08:24 and 09:14 - Air Tankers were dispatched from both Kamloops and Revelstoke Air Tanker bases respectively (pilots are restricted to 14-hour duty days as per DOT regulation).
- 10:47 - Birddog 11 requested medium and heavy helicopters, but none were available.
- 10:51 - Birddog 12 updated size to 80-100 ha
- 11:01 - Air Tanker operations were terminated due to safety issues with steep terrain and poor visibility. There were two other priority targets at that time - the Okanagan fire, K50628 and the Venables fire, K20624.
- 12:41 - 14:27 - The CL415s actioned the fire
- 12:55 - Evacuation of cabins around Niskonlith Lake was initiated with local volunteers, as there were no fire crews available to help at the time. An excavator and a bulldozer were used to reactivate a road and a water truck would soon be available from the Adams Lake mill.
- 14:19 - An excavator and bulldozers were working the fire with assistance from personnel in aircraft.
- 14:50 - The fire continued to burn with aggressive behavior.
- 15:23 - All resources had been pulled off the fire due to safety concerns because of aggressive fire behavior
- 16:30 - Fire Commissioner orders the evacuation of the Niskonlith Lake area on the north, south and west sides of the lake.
- 17:29 - Bird dog 31 commented...“taking a real blowup; Spot is blowing up 1 km ahead of fire; up three different mountains; spreading towards power lines”
- 17:36 - Air tankers pulled off the NE part of the fire



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- 17:49 - Crew H26 doing structure protection on the west side of lake. Burn-off protects at least two structures
- 18:12 - Long-term retardant air tankers 44, 45, 48, 89 begin drops. Bird Dog 131 reports fire has grown to about 500 ha prior to arrival.
- 18:22 - Property owners on west side of Niskonlith Lake warned to evacuate. One group remains.
- 18:25 - The McGillivray fire spotted across the South Thompson River onto the south side the Trans Canada Highway west of the community of Chase. Spot fire being attacked with a helicopter and bucket
- 18:30 (Approx) - Fire claims 20 cabins on leased Crown Land on west side of Niskonlith Lake, and one residence / trailer on Niskonlith Indian Reserve on east side of the lake.
- 19:18 - Helicopter TVTS is bucketing on spot fire
- 19:58 - Bird Dog 131 reports fire size has grown to 600 to 700 ha, Rank 4
- 20:06 - Air tankers cease drops. Fire spots up to 1 km with rank 5/6 fire behaviour. Rate of spread estimated at 3 to 5 km/h, with lake cabins directly ahead.
- 21:15 - P26 debrief with Ontario Incident Commander (IC) on the Strawberry Hill fire, Fire Centre Manager and staff

### **Industry Assistance**

In the morning of August 16, Tolko Industries Ltd. was contacted to assist with the fire using their equipment, such as bulldozers, skidders, water trucks and excavators.

A forestry technician from Tolko was contacted to deploy crews to the fire because he had an intimate knowledge of the area. He had local knowledge of road deactivations and the access to the fire area.

### **Summary of Initial Attack**

During the first few hours of the fire, the Initial Attack crews worked with the local fire department to find road access into the fire, but they were unable to find access to action the fire safely at night.

The public reported the fire to the west, not to the east of Pritchard. As a result Initial attack action was hampered due to misreporting of the fire location, lack of known road access, difficult terrain and darkness.

In the initial stages, fire line personnel, helicopters, fire line equipment, and water availability were limited.



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At this time, the fire was within 5 km from homes and cabins at Niskonlith Lake. Difficult topography, (terrain, slope, aspect), and winds hampered fire control efforts (from air attack point of view).

### Expanded Attack

After the aggressive fire behavior during August 16, 2003, the action on the fire went into the expanded attack mode.

The values at risk included the Sun Peaks Resort, Towns of Prichard, Chase, Celista, the bridge across the South Thompson River, the Trans-Canada Highway, the Adams Lake Mill and various groups of cabins and residences.

Because provincial resources were limited, there were three consecutive Ontario Fire Management Teams commanding this fire during the period of expanded attack until mop up started.

### Chronology of other significant days

#### August 19

Fire estimated to be 2,550 ha in size with 256 personnel, 34 pieces of heavy equipment, 7 helicopters and an Ontario FMT team in command.

#### August 20

Rank 5-6 fire behaviour predicted with 30 km/h wind gusts in the afternoon. Fire moved significantly on both the south and north flanks resulting in the evacuation of the Prichard area.

#### August 21

Fire size estimated to be 5,650 ha. Crews prepare for burning out on southwest corner and North River Valley to hydro line "weather permitting". Evacuation Alert established for the North Shuswap Area.

#### August 25

Fire size estimated to be 8,200 ha. 392 personnel, 123 pieces of heavy equipment and 13 helicopters are working the fire. Fire had a rate of spread of 5-10 m/min with Rank 5 behaviour.



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### September 3

Fire size estimated at 9,560 ha. Continues to challenge the North Branch.

### September 8

Fire size estimated at 11,395 ha. Fire continues to challenge on the north and west flanks. Weather finally starts to cool.

## Significant Events or Challenges

### Personnel

There is a need for consistency with personnel training and certification. Because the McGillivray fire lasted for an extended period of time and exceeded 14-day rotations, turnover of staff was an issue. Staff should stay on deployment (but given days of rest) on large, complex fires for more than one rotation to allow for continuity, at least at the management and key personnel levels.

### Contract Crews

There is a need for fire fighting contractor hours to be tracked provincially to ensure days of rest are utilized – at times crews were maxed out but then they would leave one fire and go to another one.

Performance evaluations should be done for contract crews and follow up should be completed to ensure suitable performance and compliance to policies.

### Work Scheduling

In some cases, the start of the workday for the day shifts was later than usual on this fire. Efficiency could be improved by conducting operational meetings in the evening, with an information package prepared for the next morning, and carrying out crew briefings at the staging area in the morning prior to work on the fire line. This would allow an earlier start to the workday.

There is also room for improvement in the communication between the day and night shift crews, to establish objectives and to coordinate operational activities.

### Heavy Equipment

There were many pieces of heavy equipment at peak use on this fire. More effective personnel supervision and management and control of heavy equipment would result if there was a comprehensive Division Supervisor course established, and if heavy equipment operators had an S-100 course certification.



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### Aviation

At the peak times there were 3 heavy, 4 medium and 5 light helicopters as well as a group of CL-415 air tankers supporting this fire. The appropriate personnel should be in place to provide clear fire control air and ground objectives to the pilots.

### Communications

Due to the provincial situation, there were very limited BC personnel available to be involved at the command level. While there was an agency representative assigned, it would have been beneficial to have a higher level of involvement to improve communications with the successive Ontario fire management teams.

### Other Agencies Involved in Suppression or Support Action

Generally speaking the agency representatives worked well with the BC Forest Service Protection group. There was a lot of support and cooperation from the Town of Chase in establishing the fire camp. The agencies involved on this fire included Provincial Emergency Program, Structural Fire Fighters, Canadian Military, Office of the Fire Commissioner, RCMP, Thompson/Nicola Regional District, Town of Chase, First Nations, Industry and local stakeholders such as the Sun Peaks resort, Adams Lake Sawmill and ranchers.

There could be improved communications between the structural fire fighters and the Protection organization at the IC level. It took some time for the Ontario Fire Management Team to become familiar with local interagency structure and mandates.

### Rehabilitation

Clarity needs to be established regarding applicable equipment rates and insurance during the rehabilitation phase as opposed to the actual fire suppression phase.

A rehab branch director, familiar with the area and terrain, needs to be assigned to the IC team so that priority areas are noted and established before the team leaves. This would allow for a smooth transition from mop up to rehab.

## Support Systems

### Preparedness

Fire Behavior Specialists from Ontario were utilized in forecasting fire behavior prediction to ensure safety and identify evacuation corridors of areas of potential risk. This worked well as an operational tool for evacuation areas and is worthwhile continuing.

### Training

There is need for fire suppression training for Forest District staff, Industry and First Nations as well as support training such as timekeeping, contract management and radio operation.



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People doing burn-offs require continuous training, upgrading and experience (e.g. Ops Section Chief positions).

### **Information (public, media, internal)**

The public wanted to know more of what was happening with this fire situation and at times, information was not readily available in a timely fashion.

There was also a need for added public education about fire prevention and fire behavior. The public may be unaware of the facts and, therefore, may not take their own initiative to vacate or collect valuable items when their property is in imminent danger.

Education and training of the public is also needed so they can take appropriate steps to fire proof their properties and consider the use of sprinklers on their own residences. Structural fire departments and the Protection program need to work together to develop a coordinated water sprinkler policy.

The public needs to be informed as quickly as possible on where and how to evacuate their cattle and other livestock.

### **Finance and Administration**

There is a need to have updated financial administration policies and procedures in place and accessible to field staff and IC Team.

Local liaison staff should be identified and involved with the IC Team so that consistency is attained throughout the centre, zones and field staff.

Land use agreements should be written from a standard guideline for accuracy and consistency and finance and administration kits need to be updated and sent with the teams deployed to a fire.

A better mapping system showing results of Danger Tree Assessor areas is required to outline safe or dangerous areas for ground personnel.

Printed maps could be delivered more quickly – staff need the ability to readily access map bases and identify companies that can provide digitizing and other mapping services.

### **Systems**

The RAM Infra Red system was accurate and useful and the AWIS system was very helpful, although there were time delays in receiving the information after the scans were done.

During the course of the fire control activity there was poor cell phone coverage and the radio waves were very busy.





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Implementation of a Web-based fire personnel-tracking system that includes qualifications and expertise, sorted by Protection program staff, forest district staff, industry, private citizens, and retirees, would be an asset.

### **Inventory or Property Control**

A better system of tracking property is required to prevent equipment from being lost or misplaced.

### **Monitoring**

It would be beneficial to implement an interim review or fire suppression monitoring report about three days into the fire action.

## **Challenges and possible solutions**

### **Out of Province Fire Management Teams**

A British Columbia Forest Service person should be assigned to any out-of province FMT, preferably at the deputy IC level, and a Liaison Officer also should be assigned to deal with issues and keep local stakeholders and property owners informed and involved.

### **Finance & admin**

An experienced local contract manager familiar with Fire Centre procedures should be assigned to the IC team, land use agreements should have a standard guideline to ensure accuracy and consistency, and an inventory control person should be assigned to track equipment.

### **Interagency Working Relationship**

The mandate of the BC Forest Service in the Wildland Urban Interface needs to be clarified.

Improved communications between the structural fire fighters and the Protection organization is required at the IC level and local interagency structure and mandates must be made clear to out-of-province IC teams.

Briefings for out-of-province Incident Management Teams need to be better organized to avoid delays in getting operational.

Deployment packages should include operational details and specific information on types of Protection crews, contract crews and local issues.

The Fire Centre or Zone office should be used as a staging area for incoming crews so that a local perspective can be passed on.



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### Training standards

Where appropriate, training should be standardized across the provinces, perhaps through CIFFC involvement.

Recommend: the monitoring of restricted radio operator's licenses to avoid the potential of inexperienced or untrained radio operators being put into the field; and recommend possible expanded training for timekeepers to get restricted radio operator's licenses.

### Safety

All safe work directives should be updated with clear interpretations and definitions.

Provincial standards are needed in particular areas such as Dangerous Tree Assessors and Dangerous Snag Fallers.

### Work schedules

To achieve an earlier start to the workday, operational meetings should be held in the evening with an information package prepared for the next morning. Crew briefings should also be held at the staging area in the morning prior to work on the fire line.

A method for better communication between day and night crew shifts needs to be established to establish objectives and coordinate operational activities.

### Rehabilitation

Where possible, Crown land should be used to establish retardant mixing sites.

Fire rehabilitation workload and costs can be reduced by using faller-bunchers or grapple skidders to create fuel breaks, by using natural fuel breaks like lakes, roads, creeks and rivers, and by avoiding damage to fences, septic fields and other private property improvements. The issue of compensation for damages to fences, water and septic systems, and bridges on private land also needs to be reviewed and addressed.