

5.0 Selected major fires ignited on 7 February 2009

5.1 Overview

The following section provides an overview of three major fires that were ignited on 7 February 2009. These are:

- Kilmore East fire
- Murrindindi fire
- Churchill fire

These fires comprised the majority of the area fire affected and burnt through a variety of land tenures. Each overview provides images and maps of the areas affected.

5.2 Kilmore East/Kinglake fire

5.2.1 Fire Danger Index and driving influences

According to Sullivan and McCaw (2009), the weather conditions at Kilmore Gap included temperatures above 40°C, relative humidity as low as 5 per cent and wind speeds exceeding 70km/h, with gusts reaching 90km/h. Combined with a drought factor exceeding 9.5, Sullivan and McCaw (2009) detail a grassland fire danger index of 400, and a Forest Fire Danger Index reaching nearly 200 (see Figure 5.1).

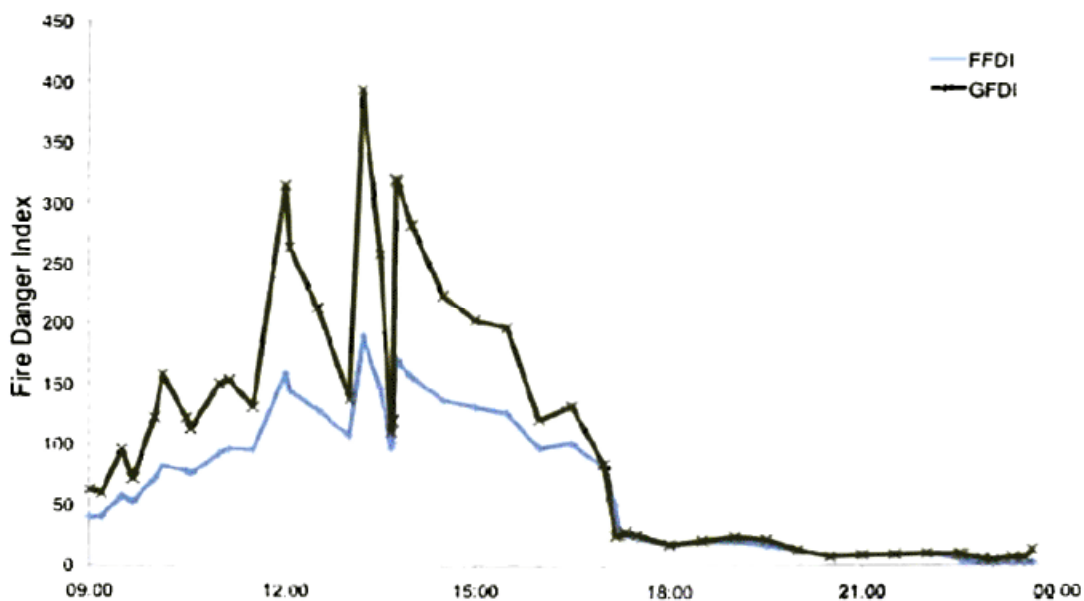


Figure 5.1 Kilmore Gap FFDI and GFDI data for 7 February 2009 from 9am to midnight. (Source: Sullivan and McCaw 2009)

5.2.2 Ignition of the Kilmore East Fire

The Royal Commission (2009) notes that the Emergency Services Telecommunications Agency (ESTA) took a call at 11:49am advising of a fire at Saunders Road, Kilmore East. Clancy (2009) quotes a spokesperson from the Kilmore Country Fire Authority who claimed the likely cause of this fire was a fallen power line. Sullivan and McCaw (2009) note that

the fire initially spread to the south east through pasture and agricultural land (Figures 5.2 and 5.3).



Figure 5.2 - Area surrounding the Kilmore East ignition point, near Saunders Road. (Photo: Chris Taylor, 26 April 2009)



Figure 5.3 - Farmland south east of the ignition area showing individual remnant native trees. Note sparse grass cover remaining in unburnt areas. (Photo: Chris Taylor, 26 April 2009)

5.2.3 Spread of the Kilmore East fire

Sullivan and McCaw (2009) and Clancy (2009) note that the fire progressed into a radiata pine plantation adjoining Saunders Road (Refer to Figure 5.4). Clancy notes that the local fire brigade was unsuccessful in preventing the fire from spreading into the pine plantation. Tolhurst and Cheney (1999) note that very intense fires are possible in radiata pine

plantations when the Fuel Moisture Content is less than 7 per cent. Given that Sullivan and McCaw (2009) record that relative humidity was around 5 per cent, the moisture content of the fuel would have been less than 7 per cent, based on the methods described in Luke and McArthur (1978).



Figure 5.4 Burnt pine plantation along Saunders Road (26 April 2009)

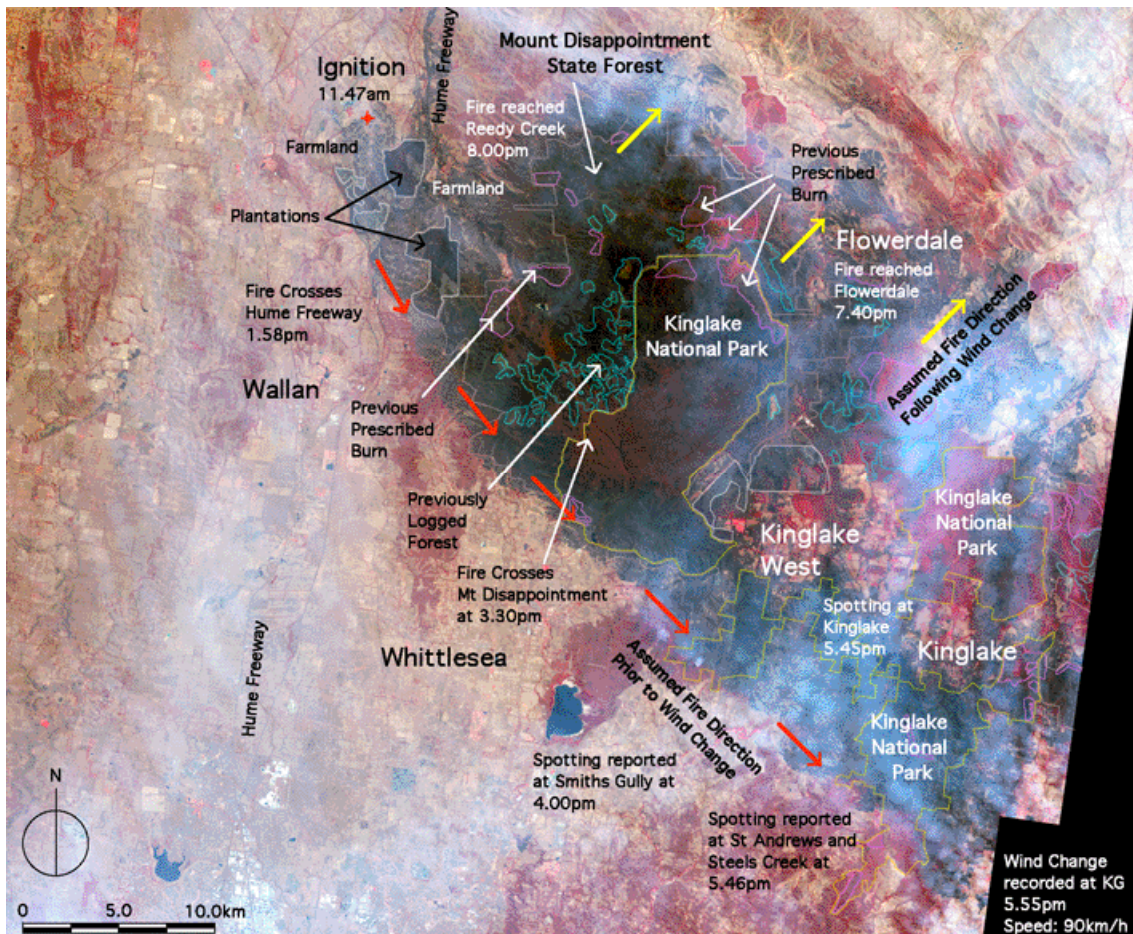
The Saunders Road Plantation adjoins the Hume Highway. According to the Royal Commission (2009), initial efforts at controlling the fire before it crossed the Hume Highway were unsuccessful. The Royal Commission (2009) noted that the fire front crossed the Hume Highway at Heathcote Junction at 1:58pm. The fire front was reported to be three kilometres wide, between Clonbinane and Broadford–Wandong Roads.



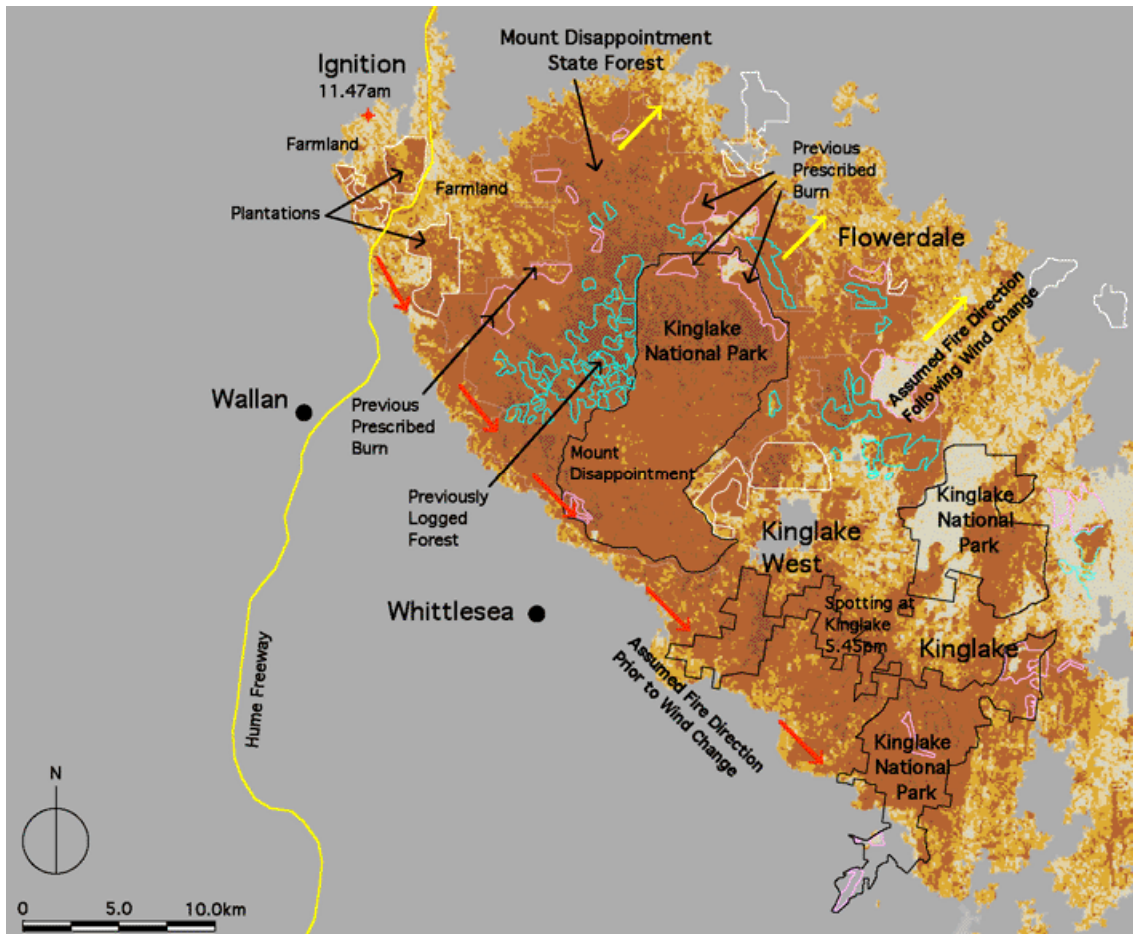
Figure 5.5 - Hume Freeway at Saunders Road overpass (26 April 2009)

The Royal Commission (2009) explains that the fire had a very elongated shape under the influence of north-westerly winds, with a length-to-breadth ratio of approximately 7:1. Sullivan and McCaw (2009) note that the fire burnt in a south-easterly direction along the escarpment of the Hume Range.

The Royal Commission (2009) notes that between 2pm and 5pm the fire front travelled another 6 kilometres under the influence of a 60–90 km/h north-westerly wind, through timber plantations and agricultural land, before entering the Mount Disappointment State Forest. It then travelled across the Great Dividing Range at Mount Disappointment, reaching the base of Mount Disappointment at 3:30pm at a speed of 8km/h. On a site trip the author observed evidence of extremely high fire severity impact resulting from intense fire in these forest areas (refer to Figure 5.6). The DSE (2009) fire severity map reveals that the area sustained class 1 to 2 fire severity impact (refer to Maps 5.1 and 5.2).



Map 5.1 - Kilmore fire and areas of Kinglake and St Andrews fire affected (Image Source: Earth Observatory. Image date: 14 February 2009)



Legend

- Fire Severity Class 1 - Crown Burn
- Fire Severity Class 2 - Crown Scorch
- Fire Severity Class 3 - Moderate Crown Scorch
- Fire Severity Class 4/5a - Light or No Crown Scorch. Understorey Burnt
- Fire Severity Class 5b - No Crown Scorch. No Understorey Burnt
- Fire Severity Class 6 - Burnt woodlands unclassified
- Fire Severity Class 7 - Burnt Grassland
- Fire Severity Class 8 - Potentially Unburnt Grassland

Map 5.2 – Severity of Kilmore fire in areas of Kinglake and St Andrews. (Image Source: DSE 2009)

Tolhurst (2009) explains that the topography of the region played a significant role in the direction and spread of the fire. He states:

“When the Kilmore East fire burnt up the side of Mount Disappointment, the winds became stronger and more westerly than those lower down in the valleys. This resulted in the fire being directed more towards Strathewen and Kinglake West rather than towards Whittlesea, but it also meant that firebrands were blown further as well, reaching the area north of Healesville. This is a distance of 35km.” (Tolhurst 2009:10)



Figure 5.6 Severe fire intensity impact. State forest west of Mount Disappointment. (Photo: Chris Taylor, 26 April 2009)

The Mount Disappointment State Forest has an extensive history of logging and other forestry operations (DSE Forest Explorer Map: accessed 20 April 2009). On a site visit, the author observed severe fire intensity impact to previous logging coupes with young trees developing conical crowns. This was the case on Lords Track, north-west of Whittlesea (see Figure 5.7).

Coupes with dense young regrowth, that had not yet developed conical crowns, appeared to suffer scorching but were not consumed as older trees in previously logged areas had been.



Figure 5.7 Fire affected regeneration after 1997 logging. Lords Track. (Photo: Chris Taylor, 26 April 2009)

The fire progressed from Mount Disappointment State forest into the Wallaby Creek Water Catchment, part of the Kinglake National Park. The southern half of the Wallaby Creek catchment contained mature and old growth stands of Mountain Ash dating back to 1730 (Ashton 1976). The northern half of the catchment had been affected by fire in 1982 and a new stand of Mountain Ash had grown up following that fire. A change in wind direction during the 1982 fire resulted in the fire burning away from the mature and old growth stands of Mountain Ash in the southern half of the catchment (Griffiths 2002).

On 7 February Mr Paul Jones, a fire spotter stationed at the fire tower on the summit of Mt St Leonards, observed the fire passing through the Mount Disappointment area. Jones (pers comm) states that the fire progressed more slowly over the summit of Mount Disappointment and through Wallaby Creek, than it had along the southern escarpment and surrounding private land. This is illustrated in a photo (Figure 5.8) by Mr Jones, showing the approaching Kilmore East fire. Thick smoke can be seen under the main smoke plume in the left of the photo, indicating that the fire had already passed through and along the southern escarpment of Mount Disappointment.



Figure 5.8 Image showing the fire progressing over the summit of Mount Disappointment and Wallaby Creek catchment. The smoke cover to the left (south of the summit of Mount Disappointment) indicates where the fire had moved faster through the surrounding foothill forests and farmland to the south.

(Photo: Paul Jones, 7 February 2009)