

# Deconstructing Suppression Efforts on Large Bushfires

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## Introduction:

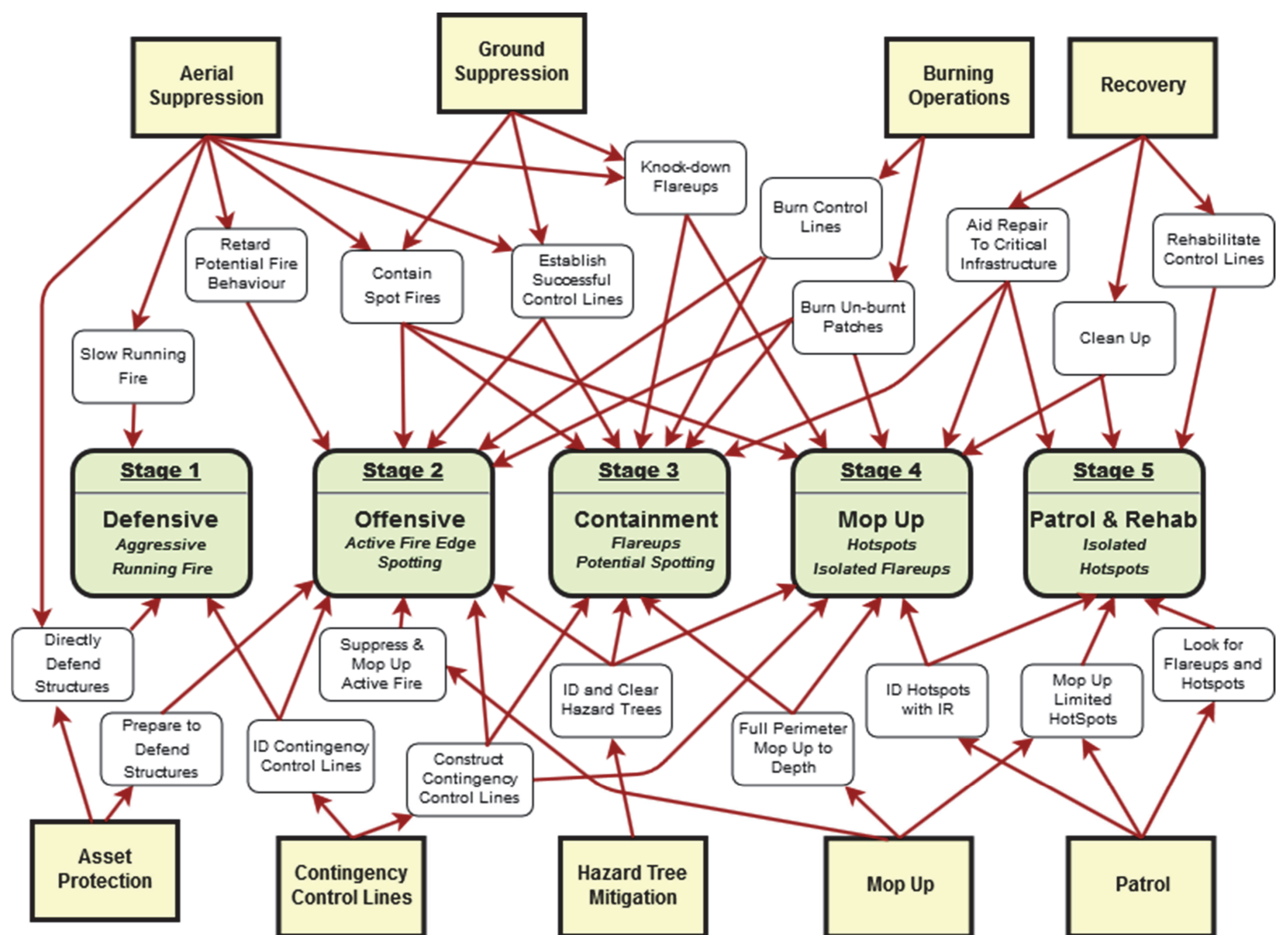
Large bushfires (over 500ha) account for a disproportionate amount of both hectares burned and suppression expenditure; however, the effectiveness of large-fire suppression is poorly understood. The aim of this study was to provide a framework for the development of an overall assessment of the effectiveness of suppression. To achieve this we conducted a qualitative document analysis of operational documents for 10 large bushfires Victoria, classifying resource types and their usage at the fireline division or sector level.

## Data Sources:

- Situation Reports
- Incident Shift Plans
- Operational Maps
- Spatial GIS Data:
  - Fire Progressions
  - Control Line Locations
  - Resource Tracking
- Weather Data
  - BOM Hourly Weather

## Methods:

- Daily fire reconstructions
  - 156 suppression days
- Systematic partition of suppression operations into five progressive stages, based on
  - Agency definitions
  - Expert consultation
  - Field experience
- Classified key suppression activities
  - Directed content analysis of over 700 documents using NVivo software



The green boxes are the stages, with indicative fire behaviour in italics. The fireline activities that were identified in the comments of the Situation Reports and Incident Shift Plans are in the white boxes. Yellow boxes are broader suppression categorisations or groupings of the fireline activities that are in common use within the Agencies.

**Results:** Suppression resources are deployed in complex ways (see figure). Less than 45% of the resources were used for containment efforts, as defined by the offensive and containment stages. Defensive firefighting accounted for a significant proportion (>12%) of the overall resourcing, while roughly 40% of resources were tasked to mop-up and patrol. Approximately half of all heavy machinery was assigned post-containment, indicating that there is a whole host of suppression activities that need to be evaluated beyond control line construction.