



PROGRAM A


→ **A3.1 Suppression Research Update
July 2006**

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PROGRAM A : A3.1 Suppression

→ **2005-06 Season - Main activities**

- Operational data collection
- Researcher fire ground data collection
- Summer student research projects
- Aerial suppression experiment - Tasmania
- Report for National Aerial Firefighting Centre
 - Draft for 31 July 2006
 - Effectiveness (A3.1)
 - Efficiency (Prog. C)

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Operational Data

- Reports filled by operational personnel
 - Suppression operation report
 - Air Attack Supervisor report
- Data on suppression effort and effectiveness, weather, terrain, fuel, fire behaviour, and fire outcome
 - Limited amount of questions that can be asked
 - One form for all scenarios/ fuel types
 - Fires with aerial suppression only
- Data from 284 fires, but only some have enough data for detailed analysis (89 forest, 29 grass)



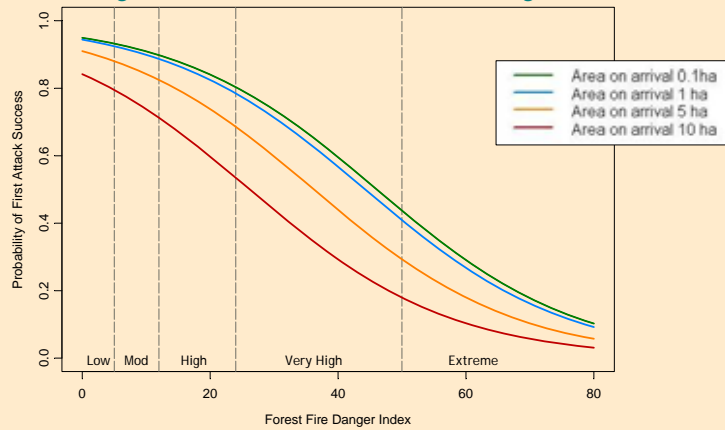
Operational data - *Preliminary model*

- Forest FDI Fuel types
 - Forest, woodland, scrub, heath, etc.
- Initial attack success
 - Containment in <8 hours
 - Binary data (success/ failure)
- Significant factors for inclusion:
 - Area burnt on arrival
 - Forest Fire Danger Index
 - Overall fuel hazard
 - Time between detection and first aerial suppression
- Draft model data still being collected



Operational data - Preliminary trends

Probability of initial attack success with area burning on arrival and Forest Fire Danger Index

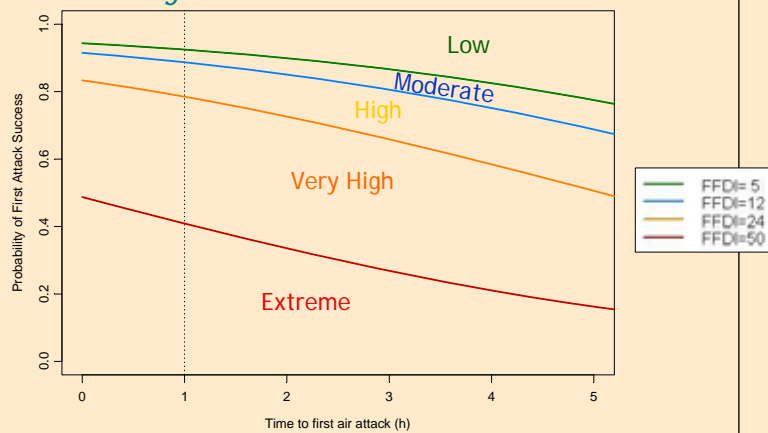


1 hour to first aerial suppression, Overall fuel hazard 3 (high)



Operational data - Preliminary trends

Probability of initial attack success with Forest Fire Danger Index and time to first aircraft attack

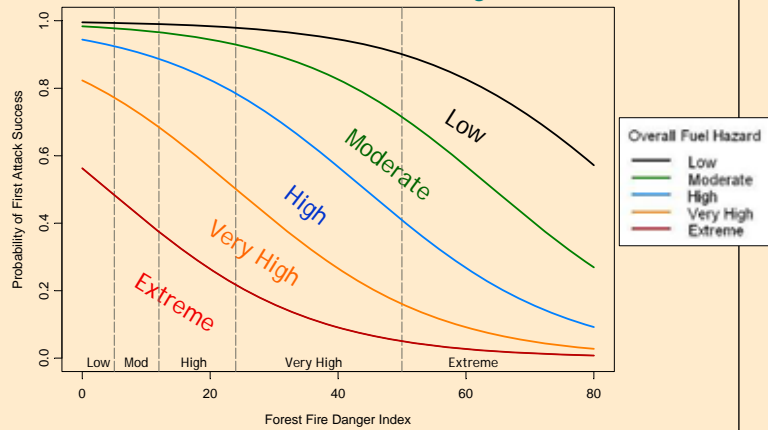


Area burning on arrival 1 ha, Overall fuel hazard 3 (high)



Operational data - Preliminary trends

Probability of initial attack success with Overall fuel hazard and Forest Fire Danger Index



Area burning on arrival 1 ha, 1 hour to first aerial suppression



Researcher fire ground data collection

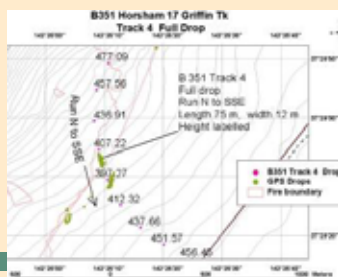
Tracking system data collection

Productivity information

Drop effectiveness verification

Direct measurement of suppression during wildfire events

Comparing pre, during, and post drop/ fire behaviour





Summer Student Research Projects

Supported by ACT Rural Fire Service

Students from School of Resources, Environment & Society, ANU



- Penetration and persistence of water and foam drops from a medium helicopter
- Assessment and application of compressed air foam tankers for grassfire fighting



Experimental Work

- Tasmania (Tasmania Fire Service)
 - Build on work of 2005 suppression experiment in stubble fuels
 - Site in tall Eucalypt forest, East coast of Tasmania
 - Type 2 (medium) helicopter
 - Investigate line holding/ building capacity without ground support and intensity of fire extinguished
 - Rained out in 2006, but carry over to Jan/ Feb 2007
- Other sites
 - WA?
 - NSW?
 - Investigating suppressants (including gels)
 - Fixed wing bombers and Type 2 (medium) helicopters