Ngarkat, South Australia, fire and smoke

Key Topics:

- fire [2]
- modelling [3]
- propagation [4]

Fire spread prediction across fuel types [5]

This research tested two established reliable physics-based models—the Fire Dynamics Simulator and FIRESTAR3D—to simulate bushfire scenarios in three broad areas: sub-canopy wind flow, firebrand transport, and propagation of grass and forest fires. The team has made significant inroads into providing usable outputs as well as understanding various aspects of bushfire behaviour. This project was established to create a capability and capacity in Australia to conduct research and understand physical-based wildfire modelling approaches. There are several international groups developing these models, and it is imperative that Australia can interact and work alongside these researchers to translate the findings to the Australian context.

# Project: detail Notabs

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## Description

It is crucial for emergency and disaster management organisations to predict of the rate of spread and intensity of bushfires for operational planning, community warnings and the deployment of their resources.

In this project, the research team tested two established reliable physics-based models: Fire Dynamics Simulator (FDS) and FIRESTAR3D to simulate bushfire scenarios in three broad areas:

(1) sub-canopy wind flow,

(2) firebrand transport, and

(3) propagation of grass and forest fires.

The team made significant inroads into providing usable outputs as well understanding various aspects of bushfire behaviour.

This project was also established to create a capability and capacity in Australia to conduct research and understand physical-based wildfire modelling approaches. There are several international groups developing these models, and it is imperative that Australia can interact and work alongside these researchers to translate the findings to the Australian context. Overall, this project has obtained greater insight into bushfire physics and outcomes are now being utilised to parameterise various phenomena for operational models.

Read the final report here. [42]

## Related News


25 MAY 2021

New online - May 2021
COMMUNICATION, MULTI-HAZARD

[43]


23 FEB 2021

New online - February 2021

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[44]


21 MAY 2020

New online - May 2020

COMMUNICATION, EMERGENCY MANAGEMENT

[45]


21 APR 2020

New online - April 2020
COMMUNICATION, EMERGENCY MANAGEMENT

[46]


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New online - February 2020
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[47]


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[50]

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New online - July 2019
EMERGENCY MANAGEMENT, FIRE

[51]


18 DEC 2018

New online - December 2018
EMERGENCY MANAGEMENT, MODELLING

[52]


15 NOV 2018

New online – November 2018
EARTHQUAKE, MODELLING

[53]


**22 OCT 2018**

New online – October 2018

[54]

**18 SEP 2018**

Conference papers available online

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[55]


08 FEB 2017

New online - February 2017

[56]


14 SEP 2016

New online - September 2016

[57]

10 DEC 2014

Newsletter - Fire spread prediction
FIRE, FIRE IMPACTS

[58]

25 AUG 2014

Fire in France

[59]

# Publications

| Year | Type | Citation |
|---|---|---|
| 2023 | Journal Article | Innocent, J. [60], Sutherland, D. [10], Khan, N. [15] & Moinuddin, K. [6] **Physics-based simulations of grassfire propagation on sloped terrain at field scale: flame dynamics, mode of fire propaga** |
| 2023 | Journal Article | Sutherland, D. [10], Rashid, M. [14], Hilton, J. [66] & Moinuddin, K. [6] **Implementation of spatially-varying wind adjustment factor for wildfire simulations** [67]. *Environmental Modelling & Software* |
| 2023 | Journal Article | Khan, N. [15], Sutherland, D. [10] & Moinuddin, K. [6] **Simulated behaviour of wildland fire spreading through idealised heterogeneous fuels** [72]. *International Journal of Wildland Fire* (2023). doi: |
| 2023 | Journal Article | Hassan, A. [77], Accary, G. [78], Sutherland, D. [10] & Moinuddin, K. [6] **Physics-based modelling of junction fires: Parametric study** [79]. *International Journal of Wildland Fire* (2023). at <https://ww |
| 2023 | Journal Article | Innocent, J. [60], Sutherland, D. [10], Khan, N. [15] & Moinuddin, K. [6] **Physics-based simulations of grassfire propagation on sloped terrain at field scale: motivations, model reliability, rate of** |
| 2022 | Journal Article | Wickramasinghe, A. [36], Khan, N. [15] & Moinuddin, K. [6] **Determining firebrand generation rate using physics-based modelling from experimental studies through inverse analysis** [89]. *Fire* 5 |
| 2022 | Journal Article | Wadhwani, R. [40], Sutherland, D. [10], Ooi, A. [94] & Moinuddin, K. [6] **Firebrand transport from a novel firebrand generator: numerical simulation of laboratory experiments** [95]. *International Jo* |
| 2022 | Journal Article | Wadhwani, R. [40] *et al.* **A review of firebrand studies on generation and transport** [100]. *Fire Safety Journal* **134,** (2022). DOI [101] Google Scholar [102] BibTeX [103] EndNote XML [104] |
| 2021 | Journal Article | Sutherland, D. [10], Sharples, J. J. [105], Mell, W. [106] & Moinuddin, K. [6] **A response to comments of Cruz et al. on: 'Simulation study of grass fire using a physics-based model: striving towa** |
| 2021 | Journal Article | Moinuddin, K. [6], Khan, N. [15] & Sutherland, D. [10] **Numerical study on effect of relative humidity (and fuel moisture) on modes of grassfire propagation** [112]. *Fire Safety Journal* (2021). doi:h |
| 2021 | Report | Rashid, M. [14] & Moinuddin, K. [6] **Studying leaf area density based wind adjustment factor in Spark** [117]. (Bushfire and Natural Hazards CRC, 2021). Google Scholar [118] BibTeX [119] EndNote |
| 2021 | Report | Khan, N. [15], Wickramasinghe, A. [36], Rashid, M. [14] & Moinuddin, K. [6] **Fire spread across different fuel types: research and utilisation – final project report** [42]. (Bushfire and Natural Hazard |
| 2020 | Journal Article | Accary, G. [78] *et al.* **Physics-Based Simulations of Flow and Fire Development Downstream of a Canopy** [124]. *Atmosphere* **11,** (2020). DOI [125] Google Scholar [126] BibTeX [127] EndNote XM |
| 2020 | Report | Moinuddin, K. [6], Khan, T. [129] & Sutherland, D. [10] **Effect of relative humidity on grassfire propagation** [130]. (Bushfire and Natural Hazards CRC, 2020). Google Scholar [131] BibTeX [132] EndN |
| 2020 | Report | Wickramasinghe, A. [36], Khan, N. [15] & Moinuddin, K. [6] **Physics-based simulation of firebrand and heat flux on structures in the context of AS3959** [134]. (Bushfire and Natural Hazards CRC, |
| 2020 | Report | Rashid, M. [14], Hilton, J. [66], Khan, N. [15], Sutherland, D. [10] & Moinuddin, K. [6] **A report on WRF software development (preliminary)** [138]. (Bushfire & Natural Hazards CRC, 2020). Google Sch |
| 2020 | Report | Khan, N. [15], Sutherland, D. [10] & Moinuddin, K. [6] **Recirculation regions downstream of a canopy on a hill** [142]. (Bushfire & Natural Hazards CRC, 2020). Google Scholar [143] BibTeX [144] En |
| 2020 | Report | Rashid, M. [14], Sutherland, D. [10] & Moinuddin, K. [6] **Fire spread prediction across fuel types: annual report 2018-19** [146]. (Bushfire and Natural Hazards CRC, 2020). Google Scholar [147] BibT |
| 2020 | Report | Khan, N. [15], Sutherland, D. [10] & Moinuddin, K. [6] **Simulation of flows through canopies with varying atmospheric stability** [150]. (Bushfire and Natural Hazards CRC, 2020). Google Scholar [15 |
| 2019 | Conference Paper | Moinuddin, K. [6] & Sutherland, D. [10] **Simulations of radiation heat flux on a structure from a fire in an idealised shrubland** [154]. *Bushfire and Natural Hazards CRC Research Day AFAC19* (201 |
| 2019 | Conference Paper | Parker, J. [159] & Allen, A. [160] **Utilisation of fire spread simulators to assess power network fire risk** [161]. *AFAC19 powered by INTERSCHUTZ - Bushfire and Natural Hazards CRC Research F* |
| 2019 | Journal Article | Sutherland, D. [10], Sharples, J. J. [105] & Moinuddin, K. [6] **The effect of ignition protocol on grassfire development** [165]. *International Journal of Wildland Fire* **29,** 70-80 (2019). DOI [166] Google |
| 2019 | Journal Article | Moinuddin, K. [6] & Sutherland, D. [10] **Modelling of tree fires and fires transitioning from the forest floor to the canopy with a physics-based model** [170]. *Mathematics and Computers in Simula* |
| 2019 | Journal Article | Khan, N. [15], Sutherland, D. [10], Wadhwani, R. [40] & Moinuddin, K. [6] **Physics-Based Simulation of Heat Load on Structures for Improving Construction Standards for Bushfire Prone Areas** |
| 2019 | Report | Khan, N. [15], Sutherland, D. [10], Philip, J. [13], Ooi, A. [8] & Moinuddin, K. [6] **A preliminary report on simulation of flows through canopies with varying atmospheric stability** [180]. (Bushfire an |
| 2018 | Conference Paper | George, N. [184], Philip, J. [13] & Ooi, A. [8] **Direct Numerical Simulation of Confined Wall Plumes** [185]. *21st Australasian Fluid Mechanics Conference* (2018). at <https://people.eng.unimelb.edu.au |
| 2018 | Conference Paper | Sutherland, D. [10], Wadhwani, R. [40], Philip, J. [13], Ooi, A. [8] & Moinuddin, K. [6] **Simulations of the effect of canopy density profile on sub-canopy wind speed profiles** [190]. *AFAC18* (Bushfire |
| 2018 | Conference Paper | Bates, J. [194] **Research proceedings from the 2018 Bushfire and Natural Hazards CRC and AFAC Conference** [195]. *Bushfire and Natural Hazards CRC & AFAC annual conference 2017* (Bushfir |
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| 2018 | Report | Sutherland, D. [10], Philip, J. [13], Ooi, A. [8] & Moinuddin, K. [6] **Literature review: modelling and simulation of flow over tree canopies** [207]. (Bushfire and Natural Hazards CRC, 2018). Google Sc |
| 2018 | Report | Moinuddin, K. [6], Roy, S. Singha [41], Sutherland, D. [10] & Khan, N. [15] **Improvements to wind field generation in physics-based models to reduce spin-up time and to account for terrain, hea** |
| 2017 | Conference Paper | Rumsewicz, M. [215] **Research proceedings from the 2017 Bushfire and Natural Hazards CRC and AFAC Conference** [216]. *Bushfire and Natural Hazards CRC & AFAC annual conference 2017* (I |
| 2017 | Conference Paper | Sutherland, D. [10], Moinuddin, K. [6] & Ooi, A. [8] **Large-eddy simulation of neutral atmospheric surface layer flow over heterogeneous tree canopies** [220]. *AFAC17* (Bushfire and Natural Hazai |
| 2017 | Journal Article | Wadhwani, R. [40], Sutherland, D. [10], Moinuddin, K. [6] & Joseph, P. [224] **Kinetics of pyrolysis of litter materials from pine and eucalyptus forests** [225]. *Journal of Thermal Analysis and Calorim* |
| 2017 | Journal Article | Wadhwani, R. [40], Sutherland, D. [10], Ooi, A. [8], Moinuddin, K. [6] & Thorpe, G. [12] **Verification of a Lagrangian particle model for short-range firebrand transport** [230]. *Fire Safety Journal* **91,** |
| 2017 | Report | Moinuddin, K. [6] & Sutherland, D. [10] **Numerical modelling of fires on forest floor and canopy fires** [235]. (Bushfire and Natural Hazards CRC, 2017). Google Scholar [236] BibTeX [237] EndNote |
| 2016 | Journal Article | MacDonald, M. [239], Chan, L. [240], Chung, D. [241], Hutchins, N. [242] & Ooi, A. [8] **Turbulent flow over transitionally rough surfaces with varying roughness densities** [243]. *Journal of Fluid D* |
| 2016 | Report | Moinuddin, K. [6], Sutherland, D. [10] & Thorpe, G. [12] **Fire spread prediction across fuel types: Annual project report 2015-2016** [248]. (Bushfire and Natural Hazards CRC, 2016). Google Scholar |
| 2015 | Presentation | Chung, D. [241] *et al.* **The spread of fires in landscapes** [252]. (2015). Google Scholar [253] BibTeX [254] EndNote XML [255] |
| 2015 | Report | Thorpe, G. [12] **Fire spread prediction across fuel types: Annual project report 2014-2015** [256]. (Bushfire and Natural Hazards CRC, 2015). Google Scholar [257] BibTeX [258] EndNote XML [259] |
| 2015 | Report | Thorpe, G. [12] **Fire Spread Across Fuel Types Annual Report 2014** [260]. (2015). Google Scholar [261] BibTeX [262] EndNote XML [263] |

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| 21 Mar 2014 | Fire spread prediction across fuel types [266] | 1.49 MB | [267] (1.49 MB) fire [2], modelling [3], prescribed burning [268] |
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| 27 Oct 2014 | Next generation models for predicting the behaviour of bushfires [271] | | fire [2], modelling [3] |
| 04 Dec 2014 | Challenges in physics based bushfire modelling [272] | 885.16 KB | [273] (885.16 KB) fire [2], fire severity [274], modelling [3] |
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| 24 Oct 2016 | Fire spread across fuel types [278] | 3.44 MB | [279] (3.44 MB) fire impacts [280], fuel reduction [281], modelling [3] |
| 25 Oct 2016 | Next generation fire modelling [282] | 1.35 MB | [283] (1.35 MB) fire impacts [280], fire severity [274], fire weather [284 |
| 07 Jul 2017 | Building bushfire predictive services capability [285] | 9.97 MB | [286] (9.97 MB) fire [2], fire weather [284], modelling [3] |
| 07 Jul 2017 | Building bushfire predictive services capability - Simon Heemstra [287] | 0 bytes | [288] (0 bytes) fire [2], fire impacts [280], modelling [3] |
| 07 Sep 2017 | Large-eddy simulation of neutral atmospheric surface layer flow over heterogeneous tree canopies [289] | 885.3 KB | [290] (885.3 KB) fire [2], modelling [3], propagation [4] |
| 07 Sep 2017 | Mapping the efficacy of an Australian fuel reduction burn using Fuels3D point clouds [291] | 1.6 MB | [292] (1.6 MB) fuel reduction [281], modelling [3], prescribed burning |
| 31 Oct 2017 | Fire spread across fuel types [293] | 1.1 MB | [294] (1.1 MB) fire [2], forecasting [295], modelling [3] |
| 18 Sep 2018 | Simulations of the effect of canopy density profile on sub-canopy wind speed profiles [296] | 1.08 MB | [297] (1.08 MB) fire [2], fuel reduction [281] |
| 23 Nov 2018 | Fire spread prediction across fuel types by physics-based modelling [298] | 2.02 MB | [299] (2.02 MB) fire [2], fire impacts [280], fuel reduction [281] |
| 27 Aug 2019 | Simulation Of Heat Fluxes On A Structure From A Fire In An Idealised Shrubland [300] | 495.46 KB | [301] (495.46 KB) decision making [302], fire [2] |
| 17 Oct 2019 | Fire Spread Across Fuel Types [303] | 3.21 MB | [304] (3.21 MB) fire weather [284], fuel reduction [281] |

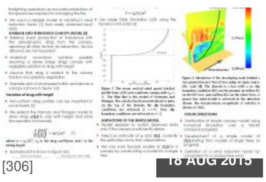
## Posters

[305]

Next generation models for predicting the behaviour of bushfires: Challenges and prospects

[305]

Bushfires occur on a scale that may be measured in kilometers.  However, a challenge faced in developing next...



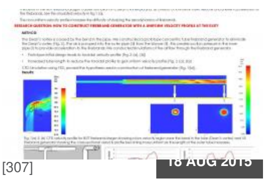
[306]

Flow Prediction Through Canopies

[306]

FIRE WEATHER [284], MODELLING [3]

A simple model of flow through a tree canopy and comparison with large-eddy simulations.



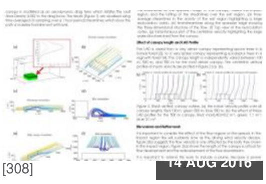
[307]

Refinement and Validation of Firebrand Transport Sub Model for a Physics Based Bushfire Prediction Model: Design of a Firebrand Generator

[307]

FIRE [2], MODELLING [3]

Firebrands are burning pieces of, for example, bark, leaf litter, and twigs. Firebrands can be transported by...



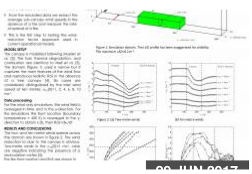
[308]

Simulations of sub-canopy winds

[308]

FIRE SEVERITY [274], REMOTE SENSING [309]

Operational fire models rely on wind reduction factors to relate the standard meteorological measured or...



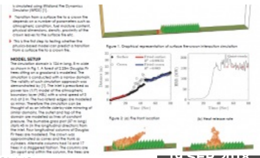
[310] 29 JUN 2017

Simulated rate-of-spread of a grassfire propagating under a tree canopy

[310]

FIRE [2], MODELLING [3]

Simulations of a fire entering, propagating under and leaving a tree canopy are conducted using FDS [1], a...



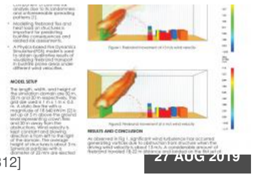
[311] 19 SEP 2018

Physics-based modelling of fires transitioning from the forest floor to the canopy

[311]

FIRE [2], MODELLING [3]

Can a physics-based model predict a transition from a surface fire to a crown fire?



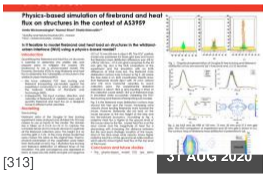
[312] 27 AUG 2019

Potential of modelling firebrand load on structure in Wildland Urban Interface

[312]

DECISION MAKING [302], FIRE IMPACTS [280]

Is it feasible to model firebrand load on structure using a physics-based model in WUI?



[313] 31 AUG 2020

Physics-based simulation of firebrand and heat flux on structures in the context of AS3959

[313]

FIRE [2]

Key findings: Validation of firebrand model in fire dynamic simulator with tree burning experimental data,...

[314] 31 AUG 2020

Dynamic wind reduction factor in predicting fire rate of spread

[314]

FUEL REDUCTION [281]

Key findings: Dynamic wind reduction factors have considerable effects on forest fires where variable canopy...

# Linked Projects

**Effectiveness of resources to supress bushfire: aerial and ground based [315]**

EMERGENCY MANAGEMENT CAPABILITY [316]

Dr Matt Plucinski
CSIRO [317]

[317]

**Mapping bushfire hazard and impacts [318]**

BUSHFIRE PREDICTIVE SERVICES [319]

A/Prof Marta Yebra
Australian National University [320]

[320]

**Fire surveillance and hazard mapping [321]**

BUSHFIRE PREDICTIVE SERVICES [319]

Prof Simon Jones
RMIT University [322]

[322]

### Through the flames - quantitative analysis of strategic and tactical wildfire suppression [323]

BUSHFIRE PREDICTIVE SERVICES [319]

Dr Greg Penney
Edith Cowan University [324]

[324]

### Improved predictions of severe weather to reduce community impact [325]

SEVERE AND HIGH IMPACT WEATHER [326]

Dr Jeff Kepert
Bureau of Meteorology [327]

[327]

### Optimisation of fuel reduction burning regimes [328]

PRESCRIBED BURNING AND CATCHMENT MANAGEMENT [329]

A/Prof Tina Bell
University of Sydney [330]

[330]

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https://www.bnhcrc.com.au/organisations/samfs [34] https://www.bnhcrc.com.au/people/sheemstra [35] https://www.bnhcrc.com.au/people/smatthews [36] https://www.bnhcrc.com.au/people/awickramasinghe [37]
https://www.bnhcrc.com.au/people/gavin.maund [38] https://www.bnhcrc.com.au/people/jinnocent [39] https://www.bnhcrc.com.au/people/ngeorge [40] https://www.bnhcrc.com.au/people/rwadhwani [41]
https://www.bnhcrc.com.au/people/ssroy [42] https://www.bnhcrc.com.au/publications/biblio/bnh-7996 [43] https://www.bnhcrc.com.au/news/2021/new-online-may-2021 [44] https://www.bnhcrc.com.au/news/2021/new-online-
february-2021 [45] https://www.bnhcrc.com.au/news/2020/new-online-may-2020 [46] https://www.bnhcrc.com.au/news/2020/new-online-april-2020 [47] https://www.bnhcrc.com.au/news/2020/new-online-february-2020 [48]
https://www.bnhcrc.com.au/news/2019/special-edition-monographs-share-afac19-science-0 [49] https://www.bnhcrc.com.au/news/2019/predictive-services-research-spotlighted [50] https://www.bnhcrc.com.au/news/2019/new-
online-october-2019 [51] https://www.bnhcrc.com.au/news/2019/new-online-july-2019 [52] https://www.bnhcrc.com.au/news/2018/new-online-december-2018 [53] https://www.bnhcrc.com.au/news/2018/new-online-november-2018
[54] https://www.bnhcrc.com.au/news/2018/new-online-october-2018 [55] https://www.bnhcrc.com.au/news/2018/conference-papers-available-online [56] https://www.bnhcrc.com.au/news/2017/new-online-february-2017 [57]
https://www.bnhcrc.com.au/news/2016/new-online-september-2016 [58] https://www.bnhcrc.com.au/news/2014/newsletter-fire-spread-prediction [59] https://www.bnhcrc.com.au/news/blogpost/graham-thorpe/2014/fire-france [60]
https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=2120 [61] https://www.bnhcrc.com.au/publications/biblio/bnh-8372 [62] http://dx.doi.org/10.1071/WF21125 [63] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22Physics-
based%2Bsimulations%2Bof%2Bgrassfire%2Bpropagation%2Bon%2Bsloped%2Bterrain%2Bat%2Bfield%2Bscale%3A%2Bflame%2Bdynamics%2C%2Bmode%2Bof%2Bfire%2Bpropagation%2Band%2Bheat%2Bfluxes%22&as
[64] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8372 [65] https://www.bnhcrc.com.au/publications/biblio/export/xml/8372 [66] https://www.bnhcrc.com.au/people/james-hilton [67]
https://www.bnhcrc.com.au/publications/biblio/bnh-8377 [68] http://dx.doi.org/10.1016/j.envsoft.2023.105660 [69] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Implementation%2Bof%2Bspatially-
varying%2Bwind%2Badjustment%2Bfactor%2Bfor%2Bwildfire%2Bsimulations%22&as_sauthors=Sutherland&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&as_yhi=&am
[70] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8377 [71] https://www.bnhcrc.com.au/publications/biblio/export/xml/8377 [72] https://www.bnhcrc.com.au/publications/biblio/bnh-8367 [73]
http://dx.doi.org/10.1071/WF22009 [74] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22Simulated%2Bbehaviour%2Bof%2Bwildland%2Bfire%2Bspreading%2Bthrough%2Bidealised%2Bheterogeneous%2Bfuels%22&as_sauthors=Khan&as_occt=any&as_epq=&
[75] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8367 [76] https://www.bnhcrc.com.au/publications/biblio/export/xml/8367 [77] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=2115 [78]
https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1872 [79] https://www.bnhcrc.com.au/publications/biblio/bnh-8366 [80] https://www.publish.csiro.au/WF/justaccepted/WF22121 [81] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22Physics-
based%2Bmodelling%2Bof%2Bjunction%2Bfires%3A%2BParametric%2Bstudy%22&as_sauthors=Hassan&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&as_yhi=&
[82] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8366 [83] https://www.bnhcrc.com.au/publications/biblio/export/xml/8366 [84] https://www.bnhcrc.com.au/publications/biblio/bnh-8375 [85]
http://dx.doi.org/10.1071/WF21124 [86] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Physics-
based%2Bsimulations%2Bof%2Bgrassfire%2Bpropagation%2Bon%2Bsloped%2Bterrain%2Bat%2Bfield%2Bscale%3A%2Bmotivations%2C%2Bmodel%2Breliability%2C%2Brate%2Bof%2Bspread%2Band%2Bfire%2Bintensity%22&
[87] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8375 [88] https://www.bnhcrc.com.au/publications/biblio/export/xml/8375 [89] https://www.bnhcrc.com.au/publications/biblio/bnh-8376 [90]
http://dx.doi.org/10.3390/fire5010006 [91] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Determining%2Bfirebrand%2Bgeneration%2Brate%2Busing%2Bphysics-
based%2Bmodelling%2Bfrom%2Bexperimental%2Bstudies%2Bthrough%2Binverse%2Banalysis%22&as_sauthors=Wickramasinghe&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as
[92] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8376 [93] https://www.bnhcrc.com.au/publications/biblio/export/xml/8376 [94] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=2123 [95]
https://www.bnhcrc.com.au/publications/biblio/bnh-8374 [96] http://dx.doi.org/10.1071/WF21088 [97] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22Firebrand%2Btransport%2Bfrom%2Ba%2Bnovel%2Bfirebrand%2Bgenerator%3A%2Bnumerical%2Bsimulation%2Bof%2Blaboratory%2Bexperiments%22&as_sauthors=Wadhwani&ar
[98] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8374 [99] https://www.bnhcrc.com.au/publications/biblio/export/xml/8374 [100] https://www.bnhcrc.com.au/publications/biblio/bnh-8373 [101]
http://dx.doi.org/10.1016/j.firesaf.2022.103674 [102] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22A%2Breview%2Bof%2Bfirebrand%2Bstudies%2Bon%2Bgeneration%2Band%2Btransport%22&as_sauthors=Wadhwani&as_occt=any&as_epq=&as_oq=&as_eq=&
[103] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8373 [104] https://www.bnhcrc.com.au/publications/biblio/export/xml/8373 [105] https://www.bnhcrc.com.au/people/jsharples [106]
https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1940 [107] https://www.bnhcrc.com.au/publications/biblio/bnh-7838 [108] http://dx.doi.org/10.1071/WF20091 [109] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22A%2Bresponse%2Bto%2Bcomments%2Bof%2BCruz%2Bet%2Bal.%2Bon%3A%2B%E2%80%98Simulation%2Bstudy%2Bof%2Bgrass%2Bfire%2Busing%2Ba%2Bphysics-
based%2Bmodel%3A%2Bstriving%2Btowards%2Bnumerical%2Brigour%2Band%2Bthe%2Beffect%2Bof%2Bgrass%2Bheight%2Bon%2Bthe%2Brate%2Bof%2Bspread%E2%80%99%22&as_sauthors=Sutherland&as_occ
[110] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/7838 [111] https://www.bnhcrc.com.au/publications/biblio/export/xml/7838 [112] https://www.bnhcrc.com.au/publications/biblio/bnh-8157 [113]
http://dx.doi.org/10.1016/j.firesaf.2021.103422 [114] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22Numerical%2Bstudy%2Bon%2Beffect%2Bof%2Brelative%2Bhumidity%2Band%2Bfuel%2Bmoisture%2Bon%2Bmodes%2Bof%2Bgrassfire%2Bpropagation%22&as_sauthors=Moinudc
[115] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8157 [116] https://www.bnhcrc.com.au/publications/biblio/export/xml/8157 [117] https://www.bnhcrc.com.au/publications/biblio/bnh-8284 [118]
http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22%2BStudying%2Bleaf%2Barea%2Bdensity%2Bbased%2Bwind%2Badjustment%2Bfactor%2Bin%2BSpark%22&as_sauthors=Rashid&as_occt=any&as_epq=&as_oq=&
[119] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/8284 [120] https://www.bnhcrc.com.au/publications/biblio/export/xml/8284 [121] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22Fire%2Bspread%2Bacross%2Bdifferent%2Bfuel%2Btypes%3A%2Bresearch%2Band%2Butilisation%2B%E2%80%93%2Bfinal%2Bproject%2Breport%22&as_sauthors=Khan&as_
[122] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/7996 [123] https://www.bnhcrc.com.au/publications/biblio/export/xml/7996 [124] https://www.bnhcrc.com.au/publications/biblio/bnh-7359 [125]
http://dx.doi.org/10.3390/atmos11070683 [126] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Physics-
Based%2BSimulations%2Bof%2BFlow%2Band%2BFire%2BDevelopment%2BDownstream%2Bof%2Ba%2BCanopy%22&as_sauthors=Accary&as_occt=any&as_epq=&as_oq=&as_eq=&as_publicatior
[127] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/7359 [128] https://www.bnhcrc.com.au/publications/biblio/export/xml/7359 [129] https://www.bnhcrc.com.au/people/tkhan [130]
https://www.bnhcrc.com.au/publications/biblio/bnh-6822 [131] http://scholar.google.com/scholar?
btnG=Search%2BScholar&as_q=%22Effect%2Bof%2Brelative%2Bhumidity%2Bon%2Bgrassfire%2Bpropagation%22&as_sauthors=Moinuddin&as_occt=any&as_epq=&as_oq=&as_eq=&as_public
[132] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6822 [133] https://www.bnhcrc.com.au/publications/biblio/export/xml/6822 [134] https://www.bnhcrc.com.au/publications/biblio/bnh-6819 [135]

http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Physics-based%2Bsimulation%2Bof%2Bfirebrand%2Band%2Bheat%2Bflux%2Bon%2Bstructures%2Bin%2Bthe%2Bcontext%2Bof%2BAS3959%22&as_sauthors=Wickramasinghe&as_occt=any&as_epq=&as_oq=&
[136] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6819 [137] https://www.bnhcrc.com.au/publications/biblio/export/xml/6819 [138] https://www.bnhcrc.com.au/publications/biblio/bnh-6642 [139] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22A%2Breport%2Bon%2BWRF%2Bsoftware%2Bdevelopment%2Bpreliminary%22&as_sauthors=Rashid&as_occt=any&as_epq=&as_oq=&as_eq=&as_publicat
[140] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6642 [141] https://www.bnhcrc.com.au/publications/biblio/export/xml/6642 [142] https://www.bnhcrc.com.au/publications/biblio/bnh-6638 [143] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Recirculation%2Bregions%2Bdownstream%2Bof%2Ba%2Bcanopy%2Bon%2Ba%2Bhill%22&as_sauthors=Khan&as_occt=any&as_epq=&as_oq=&as_eq=&as
[144] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6638 [145] https://www.bnhcrc.com.au/publications/biblio/export/xml/6638 [146] https://www.bnhcrc.com.au/publications/biblio/bnh-6900 [147] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Fire%2Bspread%2Bprediction%2Bacross%2Bfuel%2Btypes%3A%2Bannual%2Breport%2B2018-19%22&as_sauthors=Rashid&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&as_yhi=&as_sdtAAP=1&as_sdtp=1 [148] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6900 [149] https://www.bnhcrc.com.au/publications/biblio/export/xml/6900 [150] https://www.bnhcrc.com.au/publications/biblio/bnh-6830 [151] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Simulation%2Bof%2Bflows%2Bthrough%2Bcanopies%2Bwith%2Bvarying%2Batmospheric%2Bstability%22&as_sauthors=Khan&as_occt=any&as_epq=&as_oq=&
[152] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6830 [153] https://www.bnhcrc.com.au/publications/biblio/export/xml/6830 [154] https://www.bnhcrc.com.au/publications/biblio/bnh-6406 [155] https://knowledge.aidr.org.au/resources/australian-journal-of-emergency-management-monograph-series/ [156] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Simulations%2Bof%2Bradiation%2Bheat%2Bflux%2Bon%2Ba%2Bstructure%2Bfrom%2Ba%2Bfire%2Bin%2Ban%2Bidealised%2Bshrubland%2B%22&as_sauthors=Moinuddin&a
[157] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6406 [158] https://www.bnhcrc.com.au/publications/biblio/export/xml/6406 [159] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1793 [160] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1794 [161] https://www.bnhcrc.com.au/publications/biblio/bnh-6523 [162] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Utilisation%2Bof%2Bfire%2Bspread%2Bsimulators%2Bto%2Bassess%2Bpower%2Bnetwork%2Bfire%2Brisk%2B%22&as_sauthors=Parker&as_occt=any&as_epq=&as
[163] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6523 [164] https://www.bnhcrc.com.au/publications/biblio/export/xml/6523 [165] https://www.bnhcrc.com.au/publications/biblio/bnh-7242 [166] http://dx.doi.org/10.1071/WF19046 [167] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22The%2Beffect%2Bof%2Bignition%2Bprotocol%2Bon%2Bgrassfire%2Bdevelopment%22&as_sauthors=Sutherland&as_occt=any&as_epq=&as_oq=&as_eq=&
[168] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/7242 [169] https://www.bnhcrc.com.au/publications/biblio/export/xml/7242 [170] https://www.bnhcrc.com.au/publications/biblio/bnh-6045 [171] http://dx.doi.org/10.1016/j.matcom.2019.05.018 [172] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Modelling%2Bof%2Btree%2Bfires%2Band%2Bfires%2Btransitioning%2Bfrom%2Bthe%2Bforest%2Bfloor%2Bto%2Bthe%2Bcanopy%2Bwith%2Ba%2Bphysics-based%2Bmodel%22&as_sauthors=Moinuddin&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&as_yhi=&as_sdtAAP=1&as_sdtp=1 [173] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6045 [174] https://www.bnhcrc.com.au/publications/biblio/export/xml/6045 [175] https://www.bnhcrc.com.au/publications/biblio/bnh-5675 [176] http://dx.doi.org/10.3389/fmech.2019.00035 [177] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Physics-Based%2BSimulation%2Bof%2BHeat%2BLoad%2Bon%2BStructures%2Bfor%2BImproving%2BConstruction%2BStandards%2Bfor%2BBushfire%2BProne%2BAreas%22&as_sauthors=Khan&as_occt=any&as_epq=&
[178] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/5675 [179] https://www.bnhcrc.com.au/publications/biblio/export/xml/5675 [180] https://www.bnhcrc.com.au/publications/biblio/bnh-5477 [181] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22A%2Bpreliminary%2Breport%2Bon%2Bsimulation%2Bof%2Bflows%2Bthrough%2Bcanopies%2Bwith%2Bvarying%2Batmospheric%2Bstability%22&as_sauthors=Khan&as_occt=
[182] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/5477 [183] https://www.bnhcrc.com.au/publications/biblio/export/xml/5477 [184] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1721 [185] https://www.bnhcrc.com.au/publications/biblio/bnh-6144 [186] https://people.eng.unimelb.edu.au/imarusic/proceedings/21/Contribution_790_final.pdf [187] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Direct%2BNumerical%2BSimulation%2Bof%2BConfined%2BWall%2BPlumes%22&as_sauthors=George&as_occt=any&as_epq=&as_oq=&as_eq=&as_public
[188] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6144 [189] https://www.bnhcrc.com.au/publications/biblio/export/xml/6144 [190] https://www.bnhcrc.com.au/publications/biblio/bnh-5023 [191] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Simulations%2Bof%2Bthe%2Beffect%2Bof%2Bcanopy%2Bdensity%2Bprofile%2Bon%2Bsub-canopy%2Bwind%2Bspeed%2Bprofiles%22&as_sauthors=Sutherland&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&as_yhi=&as_sdtAAP=1&as_sdtp=1
[192] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/5023 [193] https://www.bnhcrc.com.au/publications/biblio/export/xml/5023 [194] https://www.bnhcrc.com.au/people/john-bates [195] https://www.bnhcrc.com.au/publications/researchproceedings2018 [196] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Research%2Bproceedings%2Bfrom%2Bthe%2B2018%2BBushfire%2Band%2BNatural%2BHazards%2BCRC%2Band%2BAFAC%2BConference%22&as_sauthors=Bates&as_oc
[197] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/4739 [198] https://www.bnhcrc.com.au/publications/biblio/export/xml/4739 [199] https://www.bnhcrc.com.au/publications/biblio/bnh-6046 [200] http://dx.doi.org/10.1071/WF17126 [201] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Simulation%2Bstudy%2Bof%2Bgrass%2Bfire%2Busing%2Ba%2Bphysics-based%2Bmodel%3A%2Bstriving%2Btowards%2Bnumerical%2Brigour%2Band%2Bthe%2Beffect%2Bof%2Bgrass%2Bheight%2Bon%2Bthe%2Brate%2Bof%2Bspread%22&as_sauthors=Moinuddin&as_occt=any&as
[202] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/6046 [203] https://www.bnhcrc.com.au/publications/biblio/export/xml/6046 [204] https://www.bnhcrc.com.au/publications/biblio/bnh-5212 [205] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/5212 [206] https://www.bnhcrc.com.au/publications/biblio/export/xml/5212 [207] https://www.bnhcrc.com.au/publications/biblio/bnh-5197 [208] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Literature%2Breview%3A%2Bmodelling%2Band%2Bsimulation%2Bof%2Bflow%2Bover%2Btree%2Bcanopies%22&as_sauthors=Sutherland&as_occt=any&as_epq=&a
[209] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/5197 [210] https://www.bnhcrc.com.au/publications/biblio/export/xml/5197 [211] https://www.bnhcrc.com.au/publications/biblio/bnh-4976 [212] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Improvements%2Bto%2Bwind%2Bfield%2Bgeneration%2Bin%2Bphysics-based%2Bmodels%2Bto%2Breduce%2Bspin-up%2Btime%2Band%2Bto%2Baccount%2Bfor%2Bterrain%2C%2Bheated%2Bearth%2Bsurface%22&as_sauthors=Moinuddin&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&
[213] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/4976 [214] https://www.bnhcrc.com.au/publications/biblio/export/xml/4976 [215] https://www.bnhcrc.com.au/people/michael-rumsewicz [216] https://www.bnhcrc.com.au/publications/researchproceedings2017 [217] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Research%2Bproceedings%2Bfrom%2Bthe%2B2017%2BBushfire%2Band%2BNatural%2BHazards%2BCRC%2Band%2BAFAC%2BConference%22&as_sauthors=Rumsewicz&
[218] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/3946 [219] https://www.bnhcrc.com.au/publications/biblio/export/xml/3946 [220] https://www.bnhcrc.com.au/publications/biblio/bnh-3882 [221] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Large-eddy%2Bsimulation%2Bof%2Bneutral%2Batmospheric%2Bsurface%2Blayer%2Bflow%2Bover%2Bheterogeneous%2Btree%2Bcanopies%22&as_sauthors=Sutherland&as_occt=any&as_epq=&as_oq=&as_
[222] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/3882 [223] https://www.bnhcrc.com.au/publications/biblio/export/xml/3882 [224] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1215 [225] https://www.bnhcrc.com.au/publications/biblio/bnh-3918 [226] http://dx.doi.org/10.1007/s10973-017-6512-0 [227] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Kinetics%2Bof%2Bpyrolysis%2Bof%2Blitter%2Bmaterials%2Bfrom%2Bpine%2Band%2Beucalyptus%2Bforests%22&as_sauthors=Wadhwani&as_occt=any&as_epq=&a
[228] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/3918 [229] https://www.bnhcrc.com.au/publications/biblio/export/xml/3918 [230] https://www.bnhcrc.com.au/publications/biblio/bnh-3917 [231] http://dx.doi.org/10.1016/j.firesaf.2017.03.019 [232] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Verification%2Bof%2Ba%2BLagrangian%2Bparticle%2Bmodel%2Bfor%2Bshort-range%2Bfirebrand%2Btransport%22&as_sauthors=Wadhwani&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&as_yhi=&as_sdtAAP=1&as_sdtp=1 [233] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/3917 [234] https://www.bnhcrc.com.au/publications/biblio/export/xml/3917 [235] https://www.bnhcrc.com.au/publications/biblio/bnh-4229 [236] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Numerical%2Bmodelling%2Bof%2Bfires%2Bon%2Bforest%2Bfloor%2Band%2Bcanopy%2Bfires%22&as_sauthors=Moinuddin&as_occt=any&as_epq=&as_oq=&as
[237] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/4229 [238] https://www.bnhcrc.com.au/publications/biblio/export/xml/4229 [239] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1066 [240] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1067 [241] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=882 [242] https://www.bnhcrc.com.au/publications/biblio?f%5Bauthor%5D=1068 [243] https://www.bnhcrc.com.au/publications/biblio/bnh-3341 [244] http://dx.doi.org/10.1017/jfm.2016.459 [245] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Turbulent%2Bflow%2Bover%2Btransitionally%2Brough%2Bsurfaces%2Bwith%2Bvarying%2Broughness%2Bdensities%22&as_sauthors=MacDonald&as_occt=any&as_epq=
[246] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/3341 [247] https://www.bnhcrc.com.au/publications/biblio/export/xml/3341 [248] https://www.bnhcrc.com.au/publications/biblio/bnh-3049 [249] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Fire%2Bspread%2Bprediction%2Bacross%2Bfuel%2Btypes%3A%2BAnnual%2Bproject%2Breport%2B2015-2016%22&as_sauthors=Moinuddin&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&as_yhi=&as_sdtAAP=1&as_sdtp=1 [250] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/3049 [251] https://www.bnhcrc.com.au/publications/biblio/export/xml/3049 [252] https://www.bnhcrc.com.au/publications/biblio/bnh-2393 [253] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22The%2Bspread%2Bof%2Bfires%2Bin%2Blandscapes%22&as_sauthors=Chung&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&am
[254] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/2393 [255] https://www.bnhcrc.com.au/publications/biblio/export/xml/2393 [256] https://www.bnhcrc.com.au/publications/biblio/bnh-2335 [257] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Fire%2Bspread%2Bprediction%2Bacross%2Bfuel%2Btypes%3A%2BAnnual%2Bproject%2Breport%2B2014-2015%22&as_sauthors=Thorpe&as_occt=any&as_epq=&as_oq=&as_eq=&as_publication=&as_ylo=&as_yhi=&as_sdtAAP=1&as_sdtp=1 [258] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/2335 [259] https://www.bnhcrc.com.au/publications/biblio/export/xml/2335 [260] https://www.bnhcrc.com.au/publications/biblio/bnh-1552 [261] http://scholar.google.com/scholar?btnG=Search%2BScholar&as_q=%22Fire%2BSpread%2BAcross%2BFuel%2BTypes%2BAnnual%2BReport%2B2014%22&as_sauthors=Thorpe&as_occt=any&as_epq=&as_oq=&as_eq=&as_pub
[262] https://www.bnhcrc.com.au/publications/biblio/export/bibtex/1552 [263] https://www.bnhcrc.com.au/publications/biblio/export/xml/1552 [264] https://www.bnhcrc.com.au/node/260/generate-pdf?order=field_date_release&sort=asc [265] https://www.bnhcrc.com.au/node/260/generate-pdf?order=title&sort=asc [266] https://www.bnhcrc.com.au/resources/presentation-slideshow/427 [267] https://www.bnhcrc.com.au/file/519/download?token=a1bqiCLD [268] https://www.bnhcrc.com.au/research/topics/prescribed-burning [269] https://www.bnhcrc.com.au/resources/presentation-slideshow/1268 [270] https://www.bnhcrc.com.au/file/3751/download?token=vzs19tRn [271] https://www.bnhcrc.com.au/resources/presentation-audio-video/1421 [272] https://www.bnhcrc.com.au/resources/presentation-slideshow/1500 [273] https://www.bnhcrc.com.au/file/4817/download?token=hy543vPU [274] https://www.bnhcrc.com.au/research/topics/fire-severity [275] https://www.bnhcrc.com.au/resources/presentation-audio-video/2630 [276] https://www.bnhcrc.com.au/file/6104/download?token=SoOFQFZf [277] https://www.bnhcrc.com.au/research/topics/scenario-analysis [278] https://www.bnhcrc.com.au/resources/presentation-slideshow/3148 [279] https://www.bnhcrc.com.au/file/6633/download?token=ChtmZhrj [280] https://www.bnhcrc.com.au/research/topics/fire-impacts [281] https://www.bnhcrc.com.au/research/topics/fuel-reduction [282] https://www.bnhcrc.com.au/hazardnotes/21 [283] https://www.bnhcrc.com.au/file/6657/download?token=3afCn-rX [284] https://www.bnhcrc.com.au/research/topics/fire-weather [285] https://www.bnhcrc.com.au/resources/presentation-slideshow/3755 [286] https://www.bnhcrc.com.au/file/7567/download?token=DIiXaif7 [287] https://www.bnhcrc.com.au/resources/presentation-audio-video/3778 [288] https://www.bnhcrc.com.au/file/7591/download?token=FoO8FhRK [289] https://www.bnhcrc.com.au/resources/presentation-slideshow/3992 [290] https://www.bnhcrc.com.au/file/7848/download?token=3yjTPHZt [291] https://www.bnhcrc.com.au/resources/presentation-slideshow/3996 [292] https://www.bnhcrc.com.au/file/7852/download?token=TAQpArk8 [293] https://www.bnhcrc.com.au/resources/presentation-slideshow/4187 [294] https://www.bnhcrc.com.au/file/7964/download?token=YuNJKCuV [295] https://www.bnhcrc.com.au/research/topics/forecasting [296] https://www.bnhcrc.com.au/resources/presentation-slideshow/4838 [297] https://www.bnhcrc.com.au/file/8754/download?token=VIPe3aEW [298] https://www.bnhcrc.com.au/resources/presentation-slideshow/5122 [299] https://www.bnhcrc.com.au/file/9199/download?token=RgwsnX1w [300] https://www.bnhcrc.com.au/resources/presentation-slideshow/5958 [301] https://www.bnhcrc.com.au/file/10375/download?token=Uxf566rh [302] https://www.bnhcrc.com.au/research/topics/decision-making [303] https://www.bnhcrc.com.au/resources/presentation-slideshow/6135 [304] https://www.bnhcrc.com.au/file/10560/download?token=_xuCrnnW [305] https://www.bnhcrc.com.au/resources/poster/1230 [306] https://www.bnhcrc.com.au/resources/poster/1996 [307] https://www.bnhcrc.com.au/resources/poster/2042 [308] https://www.bnhcrc.com.au/resources/poster/2887 [309] https://www.bnhcrc.com.au/research/topics/remote-sensing [310] https://www.bnhcrc.com.au/resources/poster/3676 [311] https://www.bnhcrc.com.au/resources/poster/4905 [312] https://www.bnhcrc.com.au/resources/poster/5902 [313] https://www.bnhcrc.com.au/resources/poster/7709 [314] https://www.bnhcrc.com.au/resources/poster/7751 [315] https://www.bnhcrc.com.au/research/understanding-and-mitigating-hazards/5676 [316] https://www.bnhcrc.com.au/research/cluster/emergency-management-capability [317] https://www.bnhcrc.com.au/organisations/csiro [318] https://www.bnhcrc.com.au/research/bushfireimpacts [319] https://www.bnhcrc.com.au/research/cluster/bushfire-predictive-services [320] https://www.bnhcrc.com.au/organisations/anu [321] https://www.bnhcrc.com.au/research/firesurveillance [322] https://www.bnhcrc.com.au/organisations/rmit [323] https://www.bnhcrc.com.au/research/understanding-and-mitigating-hazards/4648 [324] https://www.bnhcrc.com.au/organisations/edith-cowan-university [325] https://www.bnhcrc.com.au/research/predictingsevereweather [326] https://www.bnhcrc.com.au/research/cluster/severe-high-impact-weather [327] https://www.bnhcrc.com.au/organisations/bom [328] https://www.bnhcrc.com.au/research/fuelreduction [329] https://www.bnhcrc.com.au/research/cluster/prescribed-burning [330] https://www.bnhcrc.com.au/organisations/usyd