



MELBOURNE

PORTLAND

April 11-15, 2016

5th International Fire Behaviour + Fuels Conference

Wicked Problem, New Solutions: Our Fire, Our Problem

www.firebehaviorandfuelsconference.com

#2016FBF

Presented by:



International Association
of Wildland Fire

In conjunction with:



bushfire&natural
HAZARDSCRC

5TH INTERNATIONAL

FIRE BEHAVIOUR + FUELS

CONFERENCE



MELBOURNE, AUSTRALIA, 2016

Presented by



International Association
of Wildland Fire



bushfire&natural
HAZARDSCRC

GOLD SPONSORS



Australian Government

Bureau of Meteorology

FIELD TRIP SPONSORS



Environment,
Land, Water
and Planning

LECTURE THEATRE SPONSOR





5TH INTERNATIONAL
FIRE BEHAVIOUR + FUELS
CONFERENCE
MELBOURNE, AUSTRALIA, 2016

TABLE OF CONTENTS

SPONSORS	2
ABOUT IAWF & BNHCRC.....	4
WELCOME.....	5
ORGANISING COMMITTEES	6
INVITED SPEAKERS	11
GENERAL INFORMATION	14
DELEGATE INFORMATION	17
PROGRAM.....	20
POSTER LISTING.....	23
SOCIAL EVENTS	24
WORKSHOPS	25
FIELD TRIPS.....	26
TRADE DIRECTORY	27

INTERNATIONAL ASSOCIATION OF WILDLAND FIRE

The International Association of Wildland Fire (IAWF) is a non-profit, professional association representing members of the global wildland fire community. The purpose of the association is to facilitate communication and provide leadership for the wildland fire community.

The IAWF is uniquely positioned as an independent organization whose membership includes experts in all aspects of wildland fire management. IAWF's independence and breadth of global membership expertise allows it to offer a neutral forum for the consideration of important and at times controversial, wildland fire issues. Our unique membership base and organizational structure allow the IAWF to creatively apply a full range of wildland fire knowledge to accomplishing its stated mission.

Vision: To be an acknowledged resource, from the local to global scale, of scientific and technical knowledge, education, networking and professional development that is depended on by members and partners in the international wildland fire community.



International Journal of Wildland Fire

Our official fire science journal, published on our behalf by CSIRO, is dedicated to the advancement of basic and applied research covering wildland fire. IAWF members have access to this leading scientific journal online, as a members benefit. For those members who want to receive the hard copy version of the journal, they may receive it at the IAWF discounted rate of US \$225, which includes your IAWF membership and a 1-year subscription to WILDFIRE.

WILDFIRE Magazine

All IAWF members receive WILDFIRE magazine, official publication of the IAWF. Our authors submit fire articles from all corners of the world and our topical editors cover a broad array of important issues in wildland fire. We encourage you to submit articles and photographs for inclusion in the magazine. www.wildfiremagazine.org.

There are so many reasons to become a member of the International Association of Wildland Fire but most importantly, the opportunity to be a member of a professional association that is committed to facilitating communication and providing leadership for the wildland fire community.

1418 Washburn
Missoula, Montana, USA
(01) (406) 531-8264
Toll Free from US & Canada: (888) 440-IAWF (4293)

www.iawfonline.org





BUSHFIRE + NATURAL HAZARDS CRC

The Bushfire and Natural Hazards Cooperative Research Centre draws together all of Australia and New Zealand's fire and emergency service authorities with the leading experts across a range of scientific fields to explore the causes, consequences and mitigation of natural disasters.

The CRC coordinates a national research effort in hazards, including bushfires flood, storm, cyclone, earthquake and tsunami.

From July 2013, \$47 million over eight years in Australian Government funds under the Cooperative Research Centres Program have been matched by support from state and territory government organisations, research institutions and NGOs.

Research partners include universities, Bureau of Meteorology and Geoscience Australia, and several international research organisations.

The research program has developed under the direction of the researchers and end-user agencies. The research has three major themes covering 12 clusters of projects, most of which span the priorities of those working in a multi-hazard environment.

www.bnhcrc.com.au



bushfire&natural
HAZARDSCRC

WELCOME

International Association of Wildland Fire (IAWF) is extremely proud to present the 5th International Fire Behavior + Fuels Conference, co-sponsored by IAWF and Bushfire and Natural Hazards CRC of Australia and held concurrently in Portland, OR, USA, and Melbourne, Australia. This conference is being presented to bring focus to the many issues associated with fuels, fire behavior, large wildfires, and the future of fire management.

Much attention is being given to wildland fire management. It seems with each passing year we recognize escalating complexity, increasing risk, and mounting challenges. Wildland fire management cannot respond to current and future challenges without actively enlarging its body of knowledge, experience, and capabilities. Changing situations, what many would characterize as worsening situations, must be anticipated and responded to. Predictive entities continue to forecast worsening fire seasons and continued droughts leading to expectations of increasing numbers of fires, area burned, burning intensities, and duration of wildfire activity.

As all of these elements of wildland fire are manifested, we see that simply put, this is a wicked problem. How this occurred, and what can be done about it are important considerations for future strategic planning and operational management. A significant number of research reports, national leader presentations, political hearings, accountability reports, strategic plans, and forward-looking plans state the problem and actions for the future. It is commonly reported that the most extensive and serious problem related to the health of wildland areas is the over-accumulation of vegetation, which has caused an increasing number of large, intense, uncontrollable and destructive wildfires.

Significant issues abound. New solutions are needed. Obvious targets like increased funding exist, but it is important to realize that short-term fixes are less likely to have success and long-term commitments, strategies, and actions are necessary. Management of fuel complexes; accelerated fuel treatments; preparation of communities to withstand wildfire; incorporation of learning, experience, emerging science and technology; as well as sustainable funding for wildfire suppression and fuel treatments are vital for success.

The International Association of Wildland Fire (IAWF) Bushfire and Natural Hazards CRC recognize these needs. We have an unwavering commitment to promote increased involvement, improved communication, escalated research, focused education and training, and active management support to help, promote success in wildland fire management.

This conference is designed to be innovative, revolutionary, and provocative. It will provide a forum to facilitate discussion of the latest relevant research findings, information dissemination about management treatments, stimulation of policy discussions, and inspire global fire management interaction. Both venues will provide a stage having hundreds of oral and poster presentations of new research information, practical

experience lessons, and case studies; numerous knowledge and skill building workshops; on-the-ground learning field trips and tours; keynote and plenary presentations; and panel discussions by leading experts in the field. Conference participants will be able to share what is known, what needs to be learned, how to advance knowledge, and how to use this knowledge to effectively respond to increasing concerns.

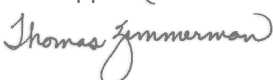
On behalf of the International Association of Wildland Fire, all conference sponsors and partners, I welcome all participants and hope that this conference will meet, and even exceed your expectations of increasing awareness, knowledge, and capability in this important field in addition to networking with peers to establish future avenues of discovery. We hope that you will enjoy attending and gain significant information from what promises to be the most informative, enlightening, and powerful conference to date on fire behavior and fuels in wildland fire management.

If you were not previously a member of the IAWF, you are receiving a one-year membership in the association included in your registration. By participating as an active IAWF member you can help to improve communication between firefighting organizations, enhance firefighter and public safety, increase our understanding of wildland fire science, and improve our ability to manage fire. Your membership in the IAWF provides you with a connection to other wildland fire professionals from across the world. Our membership, which is truly international, includes professionals from the fields of fire ecology, suppression, planning, contracting, fire use, research, and prescribed fire. Our members are scientists, firefighters, managers, contractors, and policy makers. As an association, we are unique in that we represent all areas of wildland fire management. Membership benefits include, but are not limited, to the following:

WILDFIRE magazine – All members receive Wildfire magazine, official publication of the IAWF published bi-monthly. Writers send in wildland fire articles and news from all corners of the world, and topical editors cover all the important issues in wildland fire. We encourage you to submit articles and photographs to our Wildfire Editorial Board for inclusion in the magazine.

INTERNATIONAL JOURNAL OF WILDLAND FIRE – Our other official publication of the IAWF, published by CSIRO, is dedicated to the advancement of basic and applied research covering wildland fire and is available as an additional membership option. A discounted rate of US\$225 for a 1-year subscription of eight issues is offered to IAWF members; this includes a 1-year membership and a subscription to Wildfire magazine – AND free e-access to the “Journal’s” abstracts and articles.

On behalf of the Board of Directors of the IAWF, thank you for your support of our association.



Tom Zimmerman
IAWF President



5TH INTERNATIONAL **FIRE BEHAVIOUR + FUELS** CONFERENCE

Welcome to the 5th International Fire Behaviour and Fuels Conference.

The five day program is packed with features: two workshops, more than 70 speakers, an international panel session, three PhD Three Minute Thesis, two field trips, and plenty of opportunities for networking.

The conference is in both Melbourne, Australia and Portland, Oregon, with the Bushfire and Natural Hazards CRC supporting the event in both locations. This is the first time that the conference is occurring concurrently in two locations and the two conference committees have worked together on the programs and joint promotion.

The conference theme of Wicked Problems, New Solutions: our fire, our problem is an acknowledgment that we need to share information globally about bushfire behaviour and fuels, how we engage with communities and other stakeholders so that we can act locally to protect our communities and our natural environment.

In any given year we are reminded of the relevance of innovation and research in the emergency management and land management sectors. The research, case studies and personal reflections on show this week demonstrate the significant work and the benefits that will be delivered over coming years, both in Australia and internationally.

I invite all conference delegates to attend the sessions with questions prepared, look at the posters and network with colleagues. Such interactions can be the first steps towards partnerships and new learning, which are important measures of the success of this conference.

ALEN SLJEPCEVIC

Chair, Conference Steering Committee, Melbourne
Vice-President, International Association of Wildland Fire

STEERING COMMITTEE



Alen Slijepcevic – Chair
Board of Directors, IAWF
Deputy Chief Officer
Country Fire Authority
Melbourne, Victoria, Australia



Alan Goodwin
Vice President, IAWF
Chief Fire Officer
Department of Environment,
Land, Water and Planning
Melbourne, Victoria, Australia



Simon Heemstra PhD
Manager Community Planning
NSW Rural Fire Service
New South Wales, Australia



Naian Liu PhD
Vice-Director, State Key
Laboratory of Fire Science
University of Science and
Technology of China
Board of Directors,
IAWF
Hefei, China



Kevin O'Connor
National Rural Fire Officer
New Zealand Rural Fire Authority
Wellington, New Zealand



Tony Blanks
Chair of the Program Committee
Past Member, Board of Directors,
IAWF
Retired Fire Program Manager
Hobart, Tasmania, Australia



Richard Thornton PhD
CEO
Bushfire and Natural Hazards
CRC
Melbourne, Victoria, Australia



David Bruce
Communications Manager
Bushfire and Natural Hazards
CRC
Board of Directors, IAWF
Melbourne, Victoria, Australia



Stuart Ellis
CEO
Australasian Fire and Emergency
Service Authorities Council
Melbourne, Victoria, Australia

PROGRAM

COMMITTEE



Tony Blanks – Chair
Past Member, Board of Directors,
IAWF
Retired Fire Program Manager
Hobart, Tasmania, Australia



Liam Fogarty
Director,
Knowledge & Engagement
Department of Environment,
Land, Water and Planning
Melbourne, Victoria, Australia



Mark Chladil
Fire Management
Planning Officer
Tasmania Fire Service
Hobart, Tasmania, Australia



Stuart Matthews PhD
Senior Project Officer
Operational Services/
Community Planning
NSW Rural Fire Service
Sydney, New South Wales,
Australia



Miguel Cruz PhD
Bushfire Behaviour and Risks
CSIRO Land and Water
Canberra, Australian
Capital Territory, Australia



Michael Rumsewicz PhD
Research Director
Bushfire and
Natural Hazards CRC
Melbourne, Victoria, Australia



Elizabeth Ebert PhD
Research Program Leader
Bureau of Meteorology
Melbourne, Victoria, Australia



Mike Wouters
Senior Fire Ecologist
Manager Fire Knowledge &
Engagement
Department of Environment,
Water and Natural Resources,
Adelaide, South Australia,
Australia



Grant Pearce
Scientist
Fire ResearchScion (NZ Forest
Research Institute Ltd)
Christchurch, New Zealand



Neil Cooper
Manager Fire,
Forest and Roads
ACT Parks & Conservation Service
Canberra, Australian
Capital Territory, Australia

IAWF STAFF + BOARD OF DIRECTORS

EXECUTIVE COMMITTEE

PRESIDENT

Thomas Zimmerman
USFS (retired)
Kuna, Idaho, USA

VICE PRESIDENT

Alen Slijepcevic
Deputy Chief Officer Capability and Infrastructure,
Country Fire Authority
Hampton Victoria, Australia

TREASURER

Albert Simeoni
Senior Manager
Exponent, Inc.
Natick, Massachusetts USA

SECRETARY

Katherine Clay
Fire Marshal, Battalion Chief
Jackson Hole Fire/EMS
Jackson Hole, Wyoming, USA

BOARD OF DIRECTORS

Timothy Brown

Desert Research Institute
Reno, Nevada, USA

David Bruce

Communications Manager
Bushfire and Natural Hazards
Cooperative Research Centre
Victoria, Australia

Murray Carter

Director Office of Bushfire
Risk Management (OBRM)
Western Australia

Euan Ferguson

AFSM
Victoria, Australia

Paulo Fernandes

Researcher and Professor of
Wildland Fire
Departamento de Ciências Florestais e Arquitetura
Paisagista, Universidade de Trás-os-Montes e Alto
Douro, Vila Real, Portugal

Michael Gollner

Department of Fire Protection Engineering
University of Maryland, College Park, USA

Adam Gossell

FireSmart Program Manager,
Alberta Sustainable Resource Development,
Wildfire Management Branch,
Wildfire Prevention Section.
Edmonton, Alberta, Canada

Naian Liu

Professor, Fire Safety Engineering,
State Key Laboratory of Fire Science (SKLFS)
University of Science and Technology of China

Jerry M. McAdams

Senior Captain, Wildfire Mitigation Coordinator,
Boise Fire Department
Boise, Idaho, USA

Dan Neary

USFS Rocky Mountain Research Station
Flagstaff, Arizona, USA

Guillermo Rein

Senior Lecturer
Imperial College
London, United Kingdom

Toddi A. Steelman

Executive Director and Professor
School of Environment and Sustainability
University of Saskatchewan, Canada

Kat Thomson

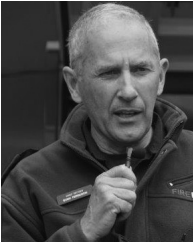
Director, Operations Research,
Uniformed Fire Officers Association, IAFF Local 854,
New York City, NY & Contract Air Attack Officer,
Wildfire Management,
Alberta Environment and
Sustainable Resource Development
Brooklyn, New York, USA

IAWF STAFF

Mikel Robinson

Executive Director
International Association of Wildland Fire
1418 Washburn
Missoula, Montana 59801, USA
execdir@iawfonline.org
406-531-8264

INVITED SPEAKERS



EUAN FERGUSON AFSM

Euan Ferguson Pty Ltd, VIC, Australia

Euan Ferguson is a forester and fire emergency manager with 39 years' experience in fire and fuels risk management, community engagement and emergency management leadership. In 2015 Euan retired after 5 years as Chief Officer with the Victorian Country Fire Authority (CFA). Previously, Euan held the role of Chief Officer and CEO of the South Australian Country Fire Service for 9 years. Prior to that, Euan held a range of field fire and forestry roles with CFA and with the public land management authority in Victoria. In the 1980's, Euan was a member of the Army Reserve, was commissioned in 1985, and served with 91 Forestry Squadron. Euan has held a number of key appointments including past Chair and inaugural member of the Board of the National Aerial Firefighting Centre (NAFC); past Chair and member of the Board of the Australasian Fire and Emergency Services Authorities Council (AFAC). Euan is currently a member of the Board of Directors of the International Association of Wildland Fire (IAWF). Euan is an advocate for firefighter safety through better decision making and promotes the philosophy of intent based leadership.

Abstract #2: When Your Burn Becomes Front Page News

The pressures to achieve burn targets put burn bosses into an unenviable situation. In an increasingly prescriptive environment, you will be damned if you fail to achieve public and political expectations on your burn targets. But burning in narrowing windows of opportunity increases the risk of losing control of your burn. Your critics will use hindsight and a wide range of expectations to criticise your good intentions. You gamble your authority, your reputation, your job and perhaps lengthy and costly litigation. Even the best intentioned experienced and capable burn bosses, working on well planned and resourced burns can find things go awry very quickly. All of a sudden, your burn has become an organisational crisis. How do you deal with this? How do you prepare? Can you prepare? The author bases this presentation on his own personal experiences and recent case studies. The presentation deals with ways to improve the resilience of your organisation, your team and yourself. It offers some hints to manage your organisation through a crisis, whilst still managing the incident and your people. It focusses on approaching tasks from a systems point of view, enabling a just culture and an ethos of continuous improvement. The concepts of "co-production" of planned burns with neighbours, of decentralised decision making and the value of having a "Devil's Advocate" on your team are discussed. It proposes that sticking to clear values and behaviours, can enable model behaviours in times of challenge.



DR SARAH MCCAFFREY

Research Forester, United States Department of Agriculture Forest Service

Sarah McCaffrey, Ph.D. is a Research Forester for the USDA Forest Service, Northern Research Station. Her research focuses on the social aspects of fire management. This work has included projects examining wildfire risk perception, social acceptability of prescribed fire and thinning, characteristics of effective communication programs, and incentives for creation and maintenance of defensible space. She has also initiated work examining social issues that occur during and after fires including evacuation decision making, agency-community interaction during fires, and community health impacts of experiencing a fire. This has included work interviewing emergency responders and residents after wildfires in the U.S. as well as work in Australia where she assisted the Bushfire Cooperative Research Centre with their post-fire data collection following the February 7th 2009 bushfires and was named a USDA liaison to the Victorian Bushfires Royal Commission. She received her PhD in Wildland Resource Science in 2002 from the University of California at Berkeley.

Abstract #1: Public response to fire management across countries: more similarities than differences

The growing social impact of bushfires around the world highlights the need to better understand the range of public response to wildfire management. However, such understanding needs to be based on empirical evidence rather than anecdotal narratives. This presentation will review findings from fire social science research published from 2000 to 2014. Initially, the majority of studies were North American based, however, recent years have seen a growing number of studies from Australia. Of note is the comparability in findings across studies and across countries. This presentation will first discuss common findings where it may be more profitable for fire educators and managers to focus as they work to improve the social outcomes of wildfires. It will also discuss where there are points of difference, in research and management focus, and what these differences may mean for considering future research questions and management decisions.



DR KEVIN TOLHURST AM

*Assoc. Prof., Fire Ecology and Management,
Department of Forest and Ecosystem Science, University of Melbourne*

Kevin Tolhurst is Associate Professor in Fire Ecology and Management in the Department of Forest and Ecosystem Science, University of Melbourne based in Creswick. Kevin has developed a professional reputation by providing expert advice on fire behaviour and fire suppression strategies at major bushfires. Some examples include the Black Saturday fires in Victoria in 2009, and the Great Divide Fires in 2007. In 2015, Kevin was made a Member of the Order of Australia in recognition of his contribution to fire science and the community over a long period. Kevin has developed and taught a number of fire related subjects at undergraduate and post-graduate level as well as a national Fire Behaviour Analyst course for technical specialists in the fire and land management agencies. Kevin's current research activities are centred around developing and applying a bushfire risk management decision support systems. He has established a group of fire scientists in the School of Ecosystem and Forest Sciences with a range of research, fire, land management and teaching skills.

His research and consulting interests include:

- Wildfire behaviour prediction
- Development of prescribed burning techniques and guidelines
- Landscape-scale fire ecology management
- Fire risk management
- Ecological impacts of repeated fires

Abstract #12: Fire is the Problem and Fire is the Solution

In Australia, we have no option but to manage fire in the landscape. This management can be proactive or reactive. Reactive fire management is easier to defend publicly and politically, but this approach is costly and ineffective. Proactive fire management has been practised in Australia for tens of thousands of years by Aboriginal Australians, but in many places, aboriginal use of fire has been disrupted by European settlement. The science of proactive landscape fire management has been studied systematically since the 1950's, but being equipped with the science of fire does not guarantee sustainable fire management.

The view of many Australians, including many fire scientists, is that fire is a damaging process that must be limited. Section 17(2)b of the Victorian National Parks Act (1975) specifically states that the Secretary of the National Parks shall: "ensure that proper and sufficient measures are taken to protect each national and State park from injury by fire;". The concept of fire as a damaging process is enshrined in legislation. However, planned burning is widely used in Australia as a land management tool, but there are ongoing and increasing pressures on fire use. The impacts of smoke on tourism and public health, the ecological impacts, the level of protection afforded to human and natural values and assets from wildfire by planned burning are all topics of debate.

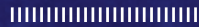
The future of fire management will need to have strong political backing. The question is how well the skills, knowledge, experience and capacity of those given the responsibility to manage fire for the population match the complexity of the task. What is clear is that there is no quick fix, but we must systematically progress along a well-defined path and do so at a rate faster than the rate of change in the climate, economy, demographics and political fashions.



Australian Government
Bureau of Meteorology

BUREAU OF METEOROLOGY

AUSTRALIA'S DEFINITIVE SOURCE OF ENVIRONMENTAL INTELLIGENCE



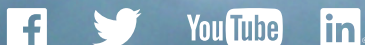
The Bureau of Meteorology is Australia's national provider of weather, climate, water, ocean and space weather information. We have been the nation's definitive source of environmental intelligence for more than 100 years.

The Bureau delivers one of the most trusted, fundamental, popular and widely used government services. Our forecasts, warnings, information and advice enable Australians to best manage the impacts of the natural environment on their everyday lives. Our expert environmental intelligence is essential for the safety, sustainability, security, well-being and prosperity of all Australians.

Australia has a high incidence of extreme weather events such as cyclones, thunderstorms, hailstorms, heatwaves and fire weather. With a growing population and expanding infrastructure to protect, our services have never been more vital.



Connect with us



GENERAL INFORMATION

CONFERENCE VENUE

Melbourne Convention and Exhibition Centre (MCEC) is located on the banks of the iconic Yarra River in South Wharf. Within the Convention Centre lies the centrepiece – The Plenary. MCEC and Plenary are easily found via Convention Centre Place next to DFO and Hilton Melbourne South Wharf. You can also walk down the Exhibition Centre Concourse from the Clarendon Street entrance.

Melbourne Convention and Exhibition Centre (MCEC)

1 Convention Centre Place
 South Wharf Victoria 3006
 Phone: +61 3 9235 8000
www.mcec.com.au



GETTING THERE

TRAVELLING BY PUBLIC TRANSPORT

BY TRAM

Catch any of the following trams and get off at the stop opposite the Clarendon Street entrance of MCEC:

Route 96 – St Kilda to East Brunswick

Route 109 – Port Melbourne to Box Hill

Route 12 – Victoria Gardens to St Kilda

Alternatively catch tram number 48 or 70 and get off at the Flinders Street stop. Then take a short walk towards the Yarra River, across the Seafarers Bridge. For further tram timetable information and trip planning, visit the Victorian Public Transport website [here](#).

BY TRAIN

Take any train that goes to Southern Cross Station. Get off at Southern Cross Station and catch tram number 96, 109 or 12 as above. For further train timetable information and trip planning, visit the Victorian Public Transport website [here](#).

BY BUS

The SkyBus transports visitors directly from Melbourne Airport to Southern Cross train station. Bus route 237 operates from Queen Victoria Market, via Southern Cross Station to Lorimer Street South Wharf from Monday to Friday. Lormier Street is approximately a five minute walk to MCEC. There is also a coach pick up/drop off point at Bay 1, Convention Centre Place (closest to DFO South Wharf).

For further bus timetable information and trip planning, visit the Victorian Public Transport website. (ptv.vic.gov.au)

TRAVELLING BY CAR

DRIVING YOURSELF

If you're driving to Melbourne Convention and Exhibition Centre, there are five car parks available for use.

MELBOURNE EXHIBITION CENTRE PARKING

1060 undercover parking spaces available, managed by Wilson Parking. Entrance and exit off Normanby Road. Open 24 hours, seven days a week.

Fees (*weekdays including public holidays*):

0.0 - 1.0 hour	\$13.00
1.0 - 2.0 hour	\$26.00
2.0 - 3.0 hour	\$39.00
3.0 - 4.0 hour	\$49.00
4.0 + hours	\$49.00 max
Lost ticket	\$50.00

Evening rate

Monday to Thursday: \$15.00, entry from 6.00pm and exit before 6.00am the next day. Casual rates will otherwise apply. Friday: \$19.00, entry from 6.00pm and exit before 6.00am the next day. Casual rates will otherwise apply.

Weekend rate

\$19.00, per day, per exit. Casual rates will otherwise apply.

Earlybird rate

Monday to Friday: \$16.00 entry between 6.00 – 9.00am and exit between 3.00pm - midnight. Casual rates will otherwise apply.

Please note - All MCEC car park patrons will be directed to car park Door 1 during overnight closure (8.00pm – 6.00am), to access the external areas of South Wharf Promenade.

CATCH A TAXI

Travelling to the Exhibition Centre?

Ask the taxi driver to drop you off at the Clarendon Street entrance of MCEC.

Travelling to the Convention Centre?

Ask the taxi driver to drop you off at Convention Centre Place, next to the Hilton Melbourne South Wharf and DFO South Wharf.

CAR HIRE

You can pick up a rental car from Melbourne Airport or within Melbourne. For more information contact the companies below for current rates and pick-up/drop off points.

Avis

Within Australia: 13 63 33
Outside Australia: +61 3 9338 1800
www.avis.com.au/car-rental/

Budget

Within Australia: 13 27 27
Outside Australia: +61 3 9241 6366
www.budget.com.au

Europcar

Within Australia: 1300 13 13 90
Outside Australia: +61 3 9241 6800
www.europcar.com.au/places/australia/melbourne

Hertz

Within Australia: 13 30 39
Outside Australia: +61 3 9338 4044
www.hertz.com.au/rentacar/reservation/

Thrifty

Within Australia: 1300 36 72 27
Outside Australia: +61 3 9241 6100
www.thrifty.com.au

Redspot

Within Australia: 1300 66 88 10
Outside Australia: +61 2 8303 2222
www.redspot.com.au



Proud field trip sponsor – 5th International Fire Behaviour and Fuels Conference

Country Fire Authority (CFA) together with partner land management agencies has adopted a risk-based approach to assess and treat bushfire risk on private and public land.

Recent CFA projects

- Grassland curing assessment
- Burn camps
- Victorian Fire Risk Register
- Community led planning
- Becoming a learning organisation
- Measuring land and property saved

Find out more at our conference exhibiter booth 8



FULL REGISTRATION INCLUSIONS

The following is included in full conference registration;

- Access to all program sessions across the duration of the conference for full registrations or on your nominated day of attendance for 1 day registrations
- Conference catering including; morning and afternoon tea and lunches and poster session drinks
- Full registrations include one ticket to the welcome reception and conference dinner
- Complimentary wireless internet access in the conference area
- Delegate handbook

ASN EVENTS REGISTRATION / INFORMATION DESK

The conference office hours are;

Tuesday open from 10:30am – 6:30pm

Wednesday open at 8:00 am – 6:00pm

Thursday open at 8:30 am – 5:30pm

SESSION LOCATIONS

Plenary Room/ Breakout 1 – Room 105 and 106

Breakout 2 – Room 104

Breakout 3 – Room 103

SPEAKER PREPERATION INSTRUCTIONS

The audio-visual equipment is being supplied and manned by operations staff from The Melbourne Convention Centre. Please visit the speaker preparation room 101 to load your presentation at least a full session in advance of your session. You should bring your talk on a USB, saved in a format for display on a PC within the room. A technician will be on hand to assist with any transfer / loading issues and to help you check your presentation. PCs will be available in the speaker preparation room and presentation rooms.

CONFERENCE APP

The official 5th International Fire Behaviour and Fuels Conference 2016 web app will keep you organised during the meeting.

You can view:

- An up-to-date daily program
- Speaker abstracts
- Speaker bios (where supplied)
- Venue maps
- Conference sponsors
- Update your profile information



Downloading the Fire Behaviour and Fuels 2016 Conference Mobile App is easy!

INSTRUCTIONS FOR APPLE DEVICES

Step 1: Copy 5th-fire-behaviour-and-fuels-conference.m.asnevents.com.au to your browser or use the above QR code.

Step 2: You will be asked to install this web app onto your iPhone – tap the screen and the icon will appear on your home screen for future use.

For further benefits and instructions for Android devices please see staff at the registration desk.

DISPLAYING YOUR POSTER

Presenters need to display their poster within the exhibition area from Wednesday 13 April. The official poster session is to be held Wednesday evening between 5:15-6:15pm.

The maximum size provided is 1m wide by 1.2m high. Please visit the registration desk for additional adhesive supplies.

INTERNET

Internet will be provided for all delegates. Please connect via Melbourne Convention and Exhibition Centre free WiFi.

CERTIFICATE OF ATTENDANCE

At the conclusion of the conference you will be able to download your certificate of attendance. Please login to your Currinda profile (<https://members.asnevents.com.au/register/event/1417>) by entering as a returning delegate and using your email address and password to login. Then move to the bottom section of your event dashboard till you reach the section on downloads. From here you will be able to download your certificate of attendance.

Please note you will only be able to download your certificate of attendance if full registration payment has been received.

NAME TAGS

Delegates are required to wear their name tags to all conference and catered sessions.

HOTEL CHECK OUTS

You are required to check out of your room by 10:00am. Should any person fail to do so, a \$50.00 late departure fee will apply.

Your hotel receptions have facilities to store your luggage. ASN have forwarded your advance room payment to your chosen hotel. You will need to settle additional private expenses yourselves on departure.

Please note hotel rooms are not guaranteed available until 2.00pm on each day though can be made available earlier in the day at the discretion of the hotel itself.

Achieving lasting and measurable outcomes in Emergency Management

At Cube Group, we help our clients build and deliver some of the best emergency management and public safety solutions in the world. We love the complexity of this sector and work on projects across the full spectrum of emergency management, from resilience and preparedness to response and recovery.

Making public value happen in:

- Policy, strategy & governance
- Organisational design & performance
- Commercial & finance
- Project management & delivery
- Communication & engagement

Meet some of the team

Our people are experienced high performers, passionate about making public value happen.



Deb Symons
Partner



Liza Gelt
Partner



Rob Camm
Partner



Vicky Kyris
Snr
Consultant



Julia Hovenden
Snr Consultant

PRE-CONFERENCE WORKSHOPS | MONDAY 11 APRIL


9:00 - 12:30	Workshop 1 - Grassland Fuels and Fire Behaviour, Bureau of Meteorology
12:30 - 13:30	LUNCH BREAK - participants to make their own arrangements
13:30 - 17:30	Workshop 2 - Fire Weather and Risk, Bureau of Meteorology
17:30 - 19:00	WORKSHOP NETWORKING FUNCTION - for participants in Workshop 2



Australian Government
Bureau of Meteorology

Workshops sponsored by

PRE-CONFERENCE WORKSHOP (CONTINUED) & DAY 1 | TUESDAY 12 APRIL

9:00 - 12:00	Workshop 2 - Fire Weather and Risk continued..., Bureau of Meteorology		
10:30 - 18:30	Conference Registration / Information Desk Open		
	STREAM 1	STREAM 2	STREAM 3
	Room 105 / 106	Room 104	Room 103
	sponsored by 		
	Chair Richard Thornton, CEO (Bushfire and Natural Hazards CRC)		
13:00 - 13:30	OPENING CEREMONY		
13:30 - 14:15	KEYNOTE: Public response to fire management across countries: more similarities than differences Dr Sarah McCaffrey, Research Forester, United States Department of Agriculture Forest Service		
14:15 - 15:00	KEYNOTE: When Your Burn Becomes Front Page News Euan Ferguson AFSM, Euan Ferguson Pty Ltd / Retired CFA Chief Officer		
15:00 - 15:30	Questions, Answers, Discussion		
15:30 - 16:00	AFTERNOON TEA		
	Fire Behaviour and Fire Behaviour Predictions Chair Lachlan McCaw (Dept. of Parks & Wildlife, WA)	Contemporary Bushfire Policies and Frameworks / Risk Modelling and Decision Support Systems Chair Tony Blanks	Fire Weather and Climate Chair Elizabeth Ebert (Bureau of Meteorology)
16:00 - 16:05	Announcements and Introductions		
16:05 - 16:30	Fuels and Fire Behaviour in New Zealand Wilding Conifers. Grant Pearce (Scion Research)	Trials, Tribulations and Triumph: Lessons Learnt from Tenure-blind Fuel Reduction in Tasmania. Sandra Whight (Tasmania Fire Service)	Climate Change and Wildland Fire Intensity. Mike Flannigan (University of Alberta, United States)
16:30 - 16:55	Investigation of Firebrand Generation in a Pine Forest. Alexander Filkov (University of Melbourne, VIC)	Bush Fire Protection Standards for Existing Development. Jon Gaibor (NSW Rural Fire Service)	Long-range spotting by bushfire plumes: The effects of plume dynamics and turbulence on firebrand trajectory. Will Thurston (Bureau of Meteorology)
16:55 - 17:20	What effect does coarse woody debris have on rate of spread of a bushfire? Andrew Sullivan (CSIRO)	Simulation Analysis-based Risk Evaluation (SABRE) Fire. Operational Stochastic Fire Spread Decision Support Capability in the Queensland Fire and Emergency Services. Ben Twomey (Queensland Fire and Emergency Services)	A Tasmanian case study of fire weather behaviour using Visual Weather. Paul Fox-Hughes (Bureau of Meteorology)
17:30 - 19:00	WELCOME RECEPTION		

DAY 2 | WEDNESDAY 13 APRIL

8:00 - 18:00	Conference Registration / Information Desk Open		
	STREAM 1	STREAM 2	STREAM 3
	Room 105 / 106	Room 104	Room 103
8:00 - 9:00	Chair Stuart Ellis, CEO (Australasian Fire and Emergency Service Authorities Council)		Publishing in <i>International Journal of Wildland Fire</i> (Workshop) Susan G. Conard, George Mason University, Editor-in-Chief Stefan Doerr, Swansea University, Editor-in-Chief Jenny Foster, CSIRO Publishing, Journals Publisher
9:00 - 9:45	KEYNOTE: Wicked Fire, Sweet Solutions (by video link from Portland) Ron Steffens, Green Mountain College & Conference Co-chair		
9:45 - 10:30	KEYNOTE: Fire is the Problem and Fire is the Solution Dr Kevin Tolhurst, Assoc. Prof., Fire Ecology and Management, Department of Forest and Ecosystem Science, University of Melbourne, VIC		
10:30 - 11:00	Questions, Answers, Discussion		
11:00 - 11:20	MORNING TEA		



	Fire Behaviour and Fire Behaviour Predictions <i>Chair Stuart Matthews (NSW Rural Fire Service)</i>	Risk Modelling and Decision Support Systems <i>Chair Mark Chladil (Tasmania Fire Service)</i>	Fire Weather and Climate <i>Chair Grant Pearce(Scion Research)</i>
11:20 - 11:45	User oriented verification of fire spread models. Paul Fox-Hughes (Bureau of Meteorology)	Using Maps to Successfully Display Complex Bushfire Behaviour Attributes in Victoria. Frazer Wilson (Forest Fire Management Victoria)	Modelling the fire weather of the Blue Mountains fires of 17 October 2013. Simon E. Ching (Bureau of Meteorology)
11:45 - 12:10	Characterising Fire Weather for Victorian Fire Risk Landscapes. Sarah Harris (Monash University, VIC)	Changes to WUI Fire Risk in Disparate Communities of Southern California, USA. Christopher Dicus (California Polytechnic State University, United States)	Large-eddy simulations of pyro-convection and its sensitivity to moisture. Will Thurston (Bureau of Meteorology)
12:10 - 12:35	Modified fire behaviour in a coupled fire-atmosphere model. David Kinniburgh (Monash University, VIC)	Playing With Models: How Risk Analysis Tools Have Been Applied in Tasmania to Evaluate the Most Effective Approach to Fuel Reduction. Rochelle Richards (Tasmania Fire Service)	Analysing the Impacts of Vegetation and Topography on Wind Fields over Complex Terrain. Rachael Quill (University of New South Wales, ACT)
12:35 - 13:00	Sensitivity of Atypical Lateral Fire Spread on Lee Slopes to the Fire Environment and Fire-Atmosphere Coupling. Jason Sharples (University of New South Wales, ACT)	Developing a New Model for Quantifying Bush Fire Risk and Effective Treatment. Melissa O'Halloran (NSW Rural Fire Service)	Enhanced Weather Situational Awareness - Filling the Gaps Between the Modelled World and Reality. David Field (NSW Rural Fire Service)
13:00 - 13:40	LUNCH		
	Fire Behaviour and Fire Behaviour Predictions <i>Chair Matt Plucinski (CSIRO)</i>	Risk Modelling and Decision Support Systems / Fire Impacts <i>Chair Nic Gellie (Ecofuego)</i>	Smoke Management / Fuels and Fuels Modification (inc Prescribed Burning) <i>Chair David Bruce (Bushfire and Natural Hazards CRC)</i>
13:40 - 13:45	<i>Announcements and Introductions</i>	<i>Announcements and Introductions</i>	<i>Announcements and Introductions</i>
13:45 - 13:50	Student Presentation - "Three Minute Thesis" Refinement of the submodels of pyrolysis and firebrand transport and undertaking experiments to validate those for a physics-based bushfire prediction model. Rahul Wadhwani (Victoria University, VIC)	Student Presentation - "Three Minute Thesis" Empirical analysis of spot-fire and ember behaviour during extreme fire weather conditions. Michael Storey (Wollongong University, NSW)	Student Presentation - "Three Minute Thesis" The Hydro-Geomorphic Sensitivity of Forested Water Catchments to Wildfire. Rene van der Sant (Melbourne University, VIC)
13:50 - 14:15	The Effect of Curing on Fire Behaviour in Grasslands. Susan Kidnie (Country Fire Authority, VIC)	A Spatial DSS for the Understanding and Reduction of Long-Term Wildfire Risk. Graeme Riddell (The University of Adelaide, SA)	Evaluation of Smoke Plume Models. Laurence McCoy (NSW Rural Fire Service)
14:15 - 14:40	A new fire behaviour prediction model for spinifex grasslands. Neil Burrows (Dept. of Parks and Wildlife, WA)	An Integrated Bushfire Risk Decision Support Tool for Land Use Planning. Laura Gannon (Hawksley Consulting)	Surface fuel load modelling with LiDAR data: a case study of Upper Yarra Reservoir area, Victoria, Australia. Yang Chen (Monash University, VIC)
14:40 - 3:05	Too wet to burn? Predicting Forest Soil Moisture in Complex Terrain. Sean F. Walsh (University of Melbourne, VIC)	Evaluating Prescribed Burn Effectiveness Using Phoenix RapidFire Gridded Ignition Case Studies. Jessica Wells (NSW Rural Fire Service)	Developing Fuel Maps for Predicting Smoke Dispersion for Forests of Victoria, Australia. Luba Volkova (University of Melbourne, VIC)
15:05 - 15:30	Opening the treasure trove: Re-examining A.G. McArthur's experimental fire data. James S. Gould (CSIRO)	Predictions, Sensors and Collective Awareness. Anthony Griffiths (Dept. of Environment, Land, Water and Planning, VIC)	Building a Comprehensive Fuel Map. From Research to Operational Use. Belinda Kenny (NSW Rural Fire Service)
15:30 - 15:50	AFTERNOON TEA		
	<i>Chair Simon Heemstra (NSW Rural Fire Service)</i>	<i>Chair Murray Carter (Dept. of Fire & Emergency Services, WA)</i>	<i>Chair Miguel Cruz (CSIRO)</i>
15:50 - 16:15	Evaluation of Operational Wind Field Models over Complex Terrain. Rachael Quill (University of New South Wales, ACT)	Carbon Accounting for Fires: Emissions versus Sequestration Potential from Charcoal Production. Stefan H.Doerr (Swansea University, Wales, United Kingdom)	An alternative to forest type: modelling fuel directly with using biophysical models. Thomas J. Duff (University of Melbourne, VIC)
16:15 - 16:50	Using fire line geometry to model dynamic fire spread. Jason Sharples (University of New South Wales, ACT)	Radar Burn Ratio: A novel index for automatic fire impact assessment. Cristina Aponte (University of Melbourne, VIC)	New approaches to predicting surface fuel moisture in south east Australian forests. Gary Sheridan (University of Melbourne, VIC)
16:50 - 17:15	Quantifying uncertainty in data and predictions for fire behaviour models. Trent Penman (University of Melbourne, VIC)	Quantification of fuel moisture content and identification of critical thresholds for escalation of fire activity in SE Australia's forest regions. Rachael Nolan (University of Technology Sydney)	Effective prescribed burning strategies for eucalypt forests in southern Australia. Owen F. Price (University of Wollongong, NSW)
17:15 - 18:15	POSTER SESSION & EXHIBITION		
19:00 - 22:00	CONFERENCE DINNER - Showtime Events Centre		

DAY 3 | THURSDAY 14 APRIL

8:30 - 17:30	Conference Registration / Information Desk Open		
	STREAM 1	STREAM 2	STREAM 3
	Room 105 / 106	Room 104	Room 103
	<i>Chair/ Panel Co-Moderators:</i> Alan Goodwin , CFO, Dept. of Environment, Land, Water & Planning, VIC and Tamara Wall , Desert Research Institute (Portland) PLENARY SESSION: How do we make the complex tradeoffs necessary to effectively manage fuels for ecosystem health and public safety? (by video link between Melbourne & Portland) 1. Liam Fogarty , Director Knowledge and Community Engagement, Depart. of Environment, Land, Water and Planning 2. Murray Carter , Director Office of Bushfire Risk, Depart. of Fire and Emergency Services 3. Sandra Whight , Manager Fuel Reduction Unit Tasmania Fire Service 4. Sarah McCaffrey , Research Forester, United States Department of Agriculture Forest Service 5. Lynn M. Decker , North America Fire Learning Network Director, The Nature Conservancy 6. Zachary Prusak , The Nature Conservancy, Florida Fire Manager and Central Florida Conservation Program Director 7. Leland Tarnay , USFS/NPS		
09:00 - 11:00			
11:00 - 11:20	MORNING TEA		
	Fire Behaviour and Fire Behaviour Predictions <i>Chair Cuong Tran (Ten Rivers)</i>	Fire Impacts <i>Chair David Bruce (Bushfire and Natural Hazards CRC)</i>	Fuels and Fuels Modification (inc Prescribed Burning) <i>Chair Rochelle Richards (Tasmania Fire Service)</i>
11:20 - 11:25	<i>Announcements and Introductions</i>	<i>Announcements and Introductions</i>	<i>Announcements and Introductions</i>
11:25 - 11:50	How fire propagates from the dead surface fuel to the first branch in ornamental vegetation of WUI. Anne Ganteaume (National Research Institute of Science and Technology for Environment and Agriculture, France)	Fire and Water: New tools for evaluating water supply impacts of fire. Joanna Wand (Dept. of Environment, Land, Water & Planning, VIC)	Monitoring and forecasting fuel moisture content for Australia using a combination of remote sensing and modelling. Marta Yebrá (Australian National University, ACT)
11:50 - 12:15	Review of 20 years of progress in wildfire modelling using a fully physical approach. Dominique Morvan (Aix-Marseille University, France)	Burnt down to ashes: modelling wildfire ash distribution and composition after the Black Saturday Fires (Melbourne, 2009). Cristina Santin (Swansea University, Wales, United Kingdom)	The effect of commercial thinning operations on Overall Fuel Hazard in foothills mixed species forest in the Wombat State Forest, Victoria. Michael A. Hansby (Terramatrix)
12:15 - 12:50	The Best of Both Worlds: Fire Spread Predictions From The Head And The Heart. Matt Plucinski (CSIRO)	Measuring What Didn't Happen: Trying to Objectively Assess Fire Service Bushfire Protection. Tim Wells (Country Fire Authority, VIC)	Modeling the moisture content of dead grass fuels for fire danger and behaviour forecasting. Susan Kidnie (Country Fire Authority, VIC)

12:50 - 13:30	LUNCH		
	Fire Behaviour and Fire Behaviour Predictions / Shared Responsibility, Community Partnerships etc <i>Chair Greg Esnouf (Bushfire Consulting)</i>	Fire Suppression and Incident Management / Fire Danger <i>Chair Neil Cooper (ACT Parks and Conservation Service)</i>	Fuels and Fuels Modification (inc Prescribed Burning) <i>Chair Jim Gould (CSIRO)</i>
13:30 - 13:35	Announcements and Introductions	Announcements and Introductions	Announcements and Introductions
13:35 - 14:00	Fire behaviour prediction, improvement in model accuracy and opportunities for future research. Miguel G. Cruz (CSIRO)	Which Configurations Cause Entrapment Risk? Sébastien Lahaye (Service départemental d'Incendie et de Secours des Bouches-du-Rhone, France)	Woody Fuel Dynamics after Fire in Open Eucalypt Forest in south-western Australia. Lachlan McCaw (Dept. of Parks & Wildlife, WA)
14:00 - 14:25	Evolution of Fire Behaviour Analysis into Operational Business as Usual - The New South Wales Experience. Simon Heemstra (NSW Rural Fire Service)	Knowing Fire: Understanding and managing the tacit knowledge of fire held by Agency Staff Members. Tony English (Parks Victoria)	Improving estimates of fuel consumption and fire-related carbon emissions in Siberia with ecosystem specific field data. Elena Kukavskaya (V.N. Sukachev Institute of Forest SB RAS, Russia)
14:25 - 14:50	Indigenous Fire Knowledge and Best Practice Science in the Gulf of Carpentaria. Terrence Taylor (Carpentaria Land Council Aboriginal Corporation, QLD)	Lessons from the operational application of Himawari-8 products. Rick McRae (ACT Emergency Service Agency)	Rural New Zealand Perceptions of Risk Associated with Wildfires and Escape Burns. Veronica R. Clifford (Scion Research)
14:50 - 15:15	Sharing Responsibility: who is ready for a more meaningful partnership? Delene Weber (University Of South Australia, SA)	The National Fire Danger Rating System. Joe Buffone (Country Fire Authority, VIC)	Eight Case studies: effectiveness of prescribed burning in Mallee, heathy, and forest fuel types during the 2013 and 2014 fire seasons in Victoria. Nicholas J. Gellie (Ecofuego)
15:15 - 15:35	AFTERNOON TEA		
	<i>Chair Tamara Beckett (DELWP, VIC)</i>	<i>Chair Lyndsey Wright (Bushfire and Natural Hazards CRC)</i>	<i>Chair Andrew Sullivan (CSIRO)</i>
15:35 - 16:00	Using bushfire characterisation to foster shared responsibility in a high risk community. Suriya Vij (Dept. of Environment, Land, Water & Planning, VIC)	Exploring physical measures of fire for calculating fire danger. Stuart Matthews (NSW Rural Fire Service)	Understanding flammability in the mountainous forests of South Eastern Australia. Jane Cawson (University of Melbourne, VIC)
16:00 - 16:25	Community Protection Planning in NSW Tailoring Bush Fire Risk Management to Individual Communities. Patrick Schell (NSW Rural Fire Service)	Investigating Inconsistencies of Grassland Curing Assessment between Multiple Jurisdictions across Australia. Danielle Wright (Country Fire Authority, VIC)	Post-tropical cyclone fuel assessment and bushfire risk. Matthew Geiger (Queensland Fire and Emergency Services)
16:25 - 17:00	There are No Boundaries: the South Para Collaborative Fire Management Plan. Aidan Galpin (Dept. of Environment, Water and Natural Resources, SA)	Leveraging smart phone technology for assessing fuel hazard in fire prone landscapes. Luke Wallace (RMIT University, VIC)	National Burning Project - National Guidelines for Prescribed Burning. Paul de Mar (GHD Australia)
17:00 - 17:30	CLOSING CEREMONY		

FIELD TRIPS | FRIDAY 15 APRIL

8:00 - 16:00	East Central Bushfire Risk Landscape <i>Field Trip sponsored by</i>	 Environment, Land, Water and Planning	Forest Fire and Fuels <i>Field Trip sponsored by</i>	 Lunch provided	Buses depart & return to Melbourne Convention and Exhibition Centre.
--------------	---	---	--	--	--



Conference session sponsor - Scion Rural Fire Research Group

Scion is New Zealand's only provider of specialist fire research expertise in forest and rural landscapes. We develop science and technology to protect life and property, and to manage fire in the landscape, including:

- fire behaviour under different weather, terrain and fuel conditions
- fire-atmosphere linkages for smoke and extreme fire behaviour
- community safety and protection
- safe and effective use of fire as a land management tool
- firefighter safety and suppression effectiveness
- tools and guides to support fire management decision-making

SCION 
forests · products · innovation

www.scionresearch.com/fire



POSTER LISTING

Cristina Aponte Monitoring live canopy moisture with imaging radars	abs# 101
Carol E. Blocksome Estimating dormant season grass biomass using remote sensing	abs# 102
Miguel Cruz The Bushfire Fuel Classification: framework and fuel types	abs# 103
Andrew J Dowdy Seasonal forecasting of fire weather based on a new global fire weather database	abs# 104
Thomas Duff Modelling on and off-road travel to get to forest fires quickly	abs# 105
Nicholas Gellie Fire reconstruction and fire behaviour simulations in Mallee fuel types in north-western Victoria	abs#106
Nicholas McCarthy The Bushfire Convective Plume Experiment: Examining pyroconvection, plume dynamics and bushfire-atmosphere interaction using portable Doppler radar in the field	abs# 107
Simon Louis Gridded return values of McArthur Forest Fire Danger Index across New South Wales	abs# 109
Rick McRae Results of a formal trial for predicting blow-up fire events	abs# 110
Zigourney Nielsen A rapid assessment technique to determine the patchiness of fuel reduction burns in the Northern jarrah forests, SW Australia.	abs# 111
Grant Pearce The Influence of ENSO on New Zealand Fire Dangers – How Does the 2015/16 El Niño Compare?	Abs# 112
Melanie E Roberts A model of ember risk for improved bushfire risk management in the peri-urban fringes	abs# 113
Melanie E Roberts Dynamic risk analytics-based personalised recommendations using Mobile and Cloud technologies	abs# 114
Rodney J Stebbing Students of Fire - Building a Set of Guiding Principles	abs# 115
Robyn G Stebbing Students of Fire - How do I join? Can I start my own group?	abs# 116
Christopher M Thomas Modelling Dynamic Fire Behaviour with a Coupled Fire-Atmosphere Model	abs# 117
Alice Gower The Warringine Park Bushfire Case Study	abs# 118
Craig J Welden Translating Science into Practice: Building Networks and Landholder Capacity	abs# 119

SOCIAL ACTIVITIES

WORKSHOP NETWORKING FUNCTION

This function is for participants in Workshop 2.
The venue is the foyer of the Bureau of Meteorology
and will include light food and beverages.

MONDAY 11 APRIL • 5:30 PM - 7:00 PM

WELCOME FUNCTION

The Welcome Function will be held in the trade exhibition.

TUESDAY 12 APRIL • 5:30 PM - 7:00 PM

This event will include food and beverages.

CONFERENCE DINNER

Showtime Events, South Wharf
(A 2-minute walk from Melbourne Convention Centre)

WEDNESDAY 13 APRIL • 7:00 PM - 10:00 PM

This casual function will include dinner and beverages.
The stand-up format will allow for plenty of mingling
and networking with superb views across
the Yarra River to the city skyline.





WORKSHOPS

WORKSHOP 1 - GRASSLAND FUELS AND FIRE BEHAVIOUR

MONDAY 11 APRIL, 9.00AM TO 12.30PM

Venue - Bureau of Meteorology, 700 Collins St, Docklands

The aim of this workshop is to set out the current state of knowledge of grassland fuels and fire behaviour and to discuss areas of future research.

The workshop will be divided into four main sections; (1) the current state of knowledge of grassfire behaviour, (2) advancements made as part of the CFA Grassland Curing and Fire Danger Ratings Project, (3) grass fuel structure and fire behaviour and (4) grass fire danger rating and future work. Topics covered will include a historical perspective of McArthur's work in grasslands, best methods for assessing grassland curing and fuel load, results from a national grassland curing experimental burn program and end user perspectives. Following discussions at a fuel load workshop in Melbourne (2015), we will discuss fuel load and fuel structure; the effects on fire behaviour and how we might capture these variables in future. This workshop is targeted at anyone with an interest in grassland fire behaviour (fire managers, fire researchers, students, etc.).

Speakers will include Miguel Cruz (CSIRO), Andrew Sullivan (CSIRO), Joe Buffone (Chief Officer, CFA), Alen Slijepcevic (Deputy Chief Officer, CFA) and Susan Kidnie (CFA).

The pre-conference workshop is on the morning of Monday 11 April at the Bureau of Meteorology, which is a 15 minute walk from the Melbourne Convention and Exhibition Centre. This will allow participants to also register for the Fire Weather and Risk Workshop, which is at the same venue in the afternoon.

WORKSHOP 2 - FIRE WEATHER AND RISK

MONDAY 11 APRIL - 1.30PM TO 5.30PM, followed by networking drinks.

TUESDAY 12 APRIL - 9:00AM TO 12:00PM.

Venue - Bureau of Meteorology, 700 Collins St, Docklands

This workshop will focus on two main topics - smoke management; and ensemble and probability forecasting - within the overall theme of transitioning science to services.

Each topic will feature keynote addresses from experts in the field, addressing current operational practice, research trends and what best practice might be. The talks will be followed by plenary discussions led by knowledgeable and provocative facilitators. Speakers will be drawn from both the operational and research sectors, and we aim to also help the fire community learn from successes in other areas.

This workshop builds on previous similar fire weather and risk workshops in Busselton (2013) and Bowral (2011) and will appeal to fire and land managers and operational staff, policy makers and researchers.

This pre-conference workshop follows Workshop 1, and is on the afternoon of Monday 11 April and the morning of Tuesday 12 April, at the Bureau of Meteorology, a 15 minute walk from the Melbourne Convention and Exhibition Centre. An icebreaker function on the Monday night is included.



Australian Government

Bureau of Meteorology

BREAKFAST WORKSHOP

Published in INTERNATIONAL JOURNAL OF WILDLAND FIRE

WEDNESDAY 13 APRIL - 8.00AM TO 9.00AM, light breakfast provided

Venue - Level 1, Melbourne Convention Centre, Room 103

This workshop is aimed at assisting authors and potential authors to get their best work published in IJWF. The presenters will provide helpful guidelines, as well as some information on the journal, followed by an informal feedback session.

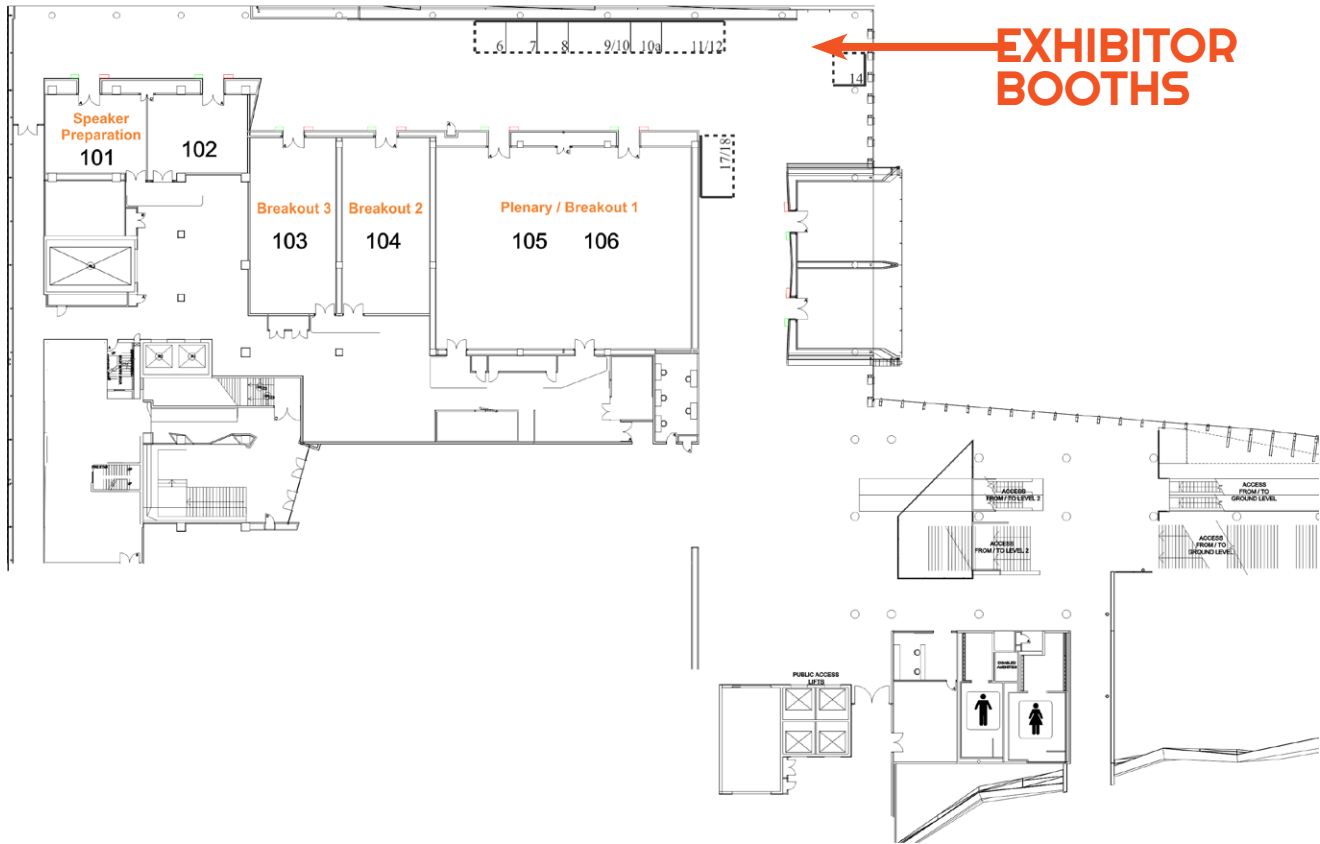
PRESENTERS INCLUDE;

Susan G. Conard, George Mason University, Editor-in-Chief

Stefan Doerr, Swansea University, Editor-in-Chief

Jenny Foster, CSIRO Publishing, Journals Publisher

TRADE DIRECTORY



**EXHIBITOR
BOOTHS**



AUSTRALIAN FIRE AND EMERGENCY SERVICE AUTHORITIES COUNCIL (AFAC)

BOOTH 9 & 10

Web: www.afac.com.au

AFAC is the National Council for Australian and New Zealand emergency services agencies -creating synergies across the emergency management sector. Through a collaboration network, development of industry doctrine, events and conferences AFAC delivers knowledge and innovation to its members and the broader emergency management sector.



Australian Government

Bureau of Meteorology

BUREAU OF METEOROLOGY GOLD SPONSOR

BOOTH 14

Web: www.bom.gov.au

The Bureau of Meteorology is Australia's national provider of weather, climate, water, ocean and space weather information. We have been the nation's definitive source of environmental intelligence for more than 100 years, and since the 1940s have provided alerts and Fire Weather Warnings to the public.

The Bureau collaborates closely with fire agencies across Australia, assisting them to prepare for fire and severe weather events and providing specialised weather services in support of response and recovery operations. Through the Bushfire and Natural Hazards CRC and other partnerships the Bureau is investigating and modelling the relationship between weather, climate, and fire behaviour.



BUSHFIRE AND NATURAL HAZARDS CRC

BOOTH 9 & 10

Web: www.bnhcrc.com.au

The Bushfire and Natural Hazards CRC draws together all of Australia and New Zealand's fire and emergency service authorities, land management agencies, as well as non-government organisations and leading experts across a range of scientific fields to explore the causes, consequences and mitigation of natural disasters.

The purpose of the Bushfire and Natural Hazards CRC is to conduct end-user inspired applied research to:

- Reduce the risks from bushfire and natural hazards
- Reduce the social, economic and environmental costs of disasters
- Contribute to the national disaster resilience agenda
- Build internationally renowned Australian research capacity and capability
- Enable Australian small to medium enterprises to be innovative in natural hazard products and services.



COUNTRY FIRE AUTHORITY

FIELD TRIP SPONSOR & BOOTH 8

Web: www.cfa.vic.gov.au

CFA (Country Fire Authority) is a volunteer and community based fire and emergency services organisation. You can find CFA brigades all across regional Victoria, as well as outer metropolitan Melbourne with an urban/rural interface. We help protect 3.3 million Victorians and more than one million homes and properties across the state. We have over 57,000 volunteers who are supported by more than 680 career firefighters. CFA also employs over 1,500 support staff who work in areas such as community education, media, communications, training, health and safety, finance, human resources and emergency management.



CSIRO – BUSHFIRE DYNAMICS

BOOTH 17 & 18

Web: www.csiro.au/en/Research/Environment/Extreme-Events/Bushfire

CSIRO's research is used to respond to bushfires in many ways, from weather warnings to fire-fighter training to predicting fire behaviour.



CSIRO PUBLISHING

BOOTH 17 & 18

Web: www.publish.csiro.au | **Phone:** +61 3 9545 8400

CSIRO PUBLISHING is a science and technology publisher with a global reputation for quality products and services. Our international publishing programme covers a range of scientific disciplines, including agriculture, the plant and animal sciences, planning and building, health and environmental management. Our product range includes journals, books and magazines, in print and online.



Environment
Land, Water
and Planning

DEPARTMENT OF ENVIRONMENT, LAND, WATER AND PLANNING

FIELD TRIP SPONSOR

Web: www.delwp.vic.gov.au

The Department of Environment, Land, Water and Planning is tasked with ensuring that Victoria has the right conditions to enable economic growth, while delivering liveable, inclusive and sustainable communities. We bring together planning, local government and infrastructure, environment, climate change and water functions, to ensure an integrated approach to the development of long-term State and regional strategies that build on social, environmental and economic opportunities to provide for future population growth and change. We build community resilience by adopting an all-hazards, all-agencies approach across our built and natural environments to improve protection against natural disasters and other emergencies.



FIELD AIR

BOOTH 11 & 12

Web: www.fieldair.com.au

The Air Tractor AT-802F single engine Air Tanker combines speed, performance and absolute reliability to accurately deliver its 3,200 litre suppressant load to the fire. Capable of operations nearby the fire, from remote air strips or with optional amphibious scooping capability, Air Tractor is relied upon by fire authorities worldwide.



INTERNATIONAL ASSOCIATION OF WILDLAND FIRE

BOOTH 6

Web: www.iawfonline.org

The International Association of Wildland Fire (IAWF) was formed in 1990 as an international professional membership association dealing with all aspects of wildland fire. For 25 years IAWF has grown from its fledgling early years to being a global leader focused association spanning 30 countries. The IAWF's independence and breadth of global membership expertise allows it to offer a neutral forum for the consideration of important, at times contentious, wildland fire issues. IAWF's membership and organization allow the group to creatively apply a full range of wildland fire knowledge to perform its stated mission of Uniting the Global Wildland Fire Community.



KENELEC

BOOTH 7

Web: www.kenelec.com.au

Established in 1962, Kenelec Scientific is one of Australia's leading and longest serving scientific & environmental technology companies. With offices in Sydney and Melbourne and key distributors located throughout Australasia, we are recognized as innovative industry leaders in the supply of latest generation technologies at competitive prices.

Kenelec Scientific provides a wide range of scientific and environmental solutions to companies throughout Australasia. We employ highly trained and experienced sales and technical support staff, maintain state-of-the-art NATA accredited calibration laboratories, offer a range of popular laboratory services, provide validation services to industry and have an established rental department servicing the needs of our rental clients.

Kenelec Scientific operates a Quality Management System that fully complies to ISO 9001:2008 and is committed to providing the highest level of service and technical support on an extensive range of innovative products.



SCHOOL OF ECOSYSTEM AND FOREST SCIENCE, UNIVERSITY OF MELBOURNE

BOOTH 10A

Web: www.ecosystemforest.unimelb.edu.au

The University of Melbourne is home to Australia's largest bushfire research and teaching effort. The University offers graduate courses in Bushfire Planning and Management that combine bushfire science with urban planning, design and construction and fire management subjects, to equip professionals for managing fire risk across built and natural environments.



SCION RURAL FIRE RESEARCH GROUP

LECTURE THEATRE SPONSOR

Web: www.scionresearch.com/fire

Scion is the NZ Crown Research Institute (CRI) that specialises in research, science and technology development for forestry. Scion's Rural Fire Research Group is NZ's only provider of specialist fire research expertise in forest and rural landscapes. We develop science and technology to protect life and property, and to manage fire in the landscape. Understanding how fires are likely to behave in different weather conditions, terrain and fuel types, and the factors affecting community and firefighter safety, are essential to rural fire management and prevention. The Group has developed a range of tools and guidelines now widely used by NZ fire managers to support fire management decision-making.