

## Queensland's Fire Weather

### Part 1 - Fire Seasons

(Excerpt – full article can be found on the SEQFBC website)

By Peter Leeson, Queensland Parks and Wildlife Service.

Much of the literature and media warnings relate to the summer fire season experienced “down south”. In Queensland, wildfires can occur at any time of the year, however the fire season usually coincides with progressive drying following the autumn rain season, peaking during the spring months of more severe fire weather, and concluding with the arrival of more regular storm events and rain in late spring and summer. On the east coast, this peak fire season is characterised by frequent dry westerly winds and lower humidity. In inland areas, wind direction is less significant and the fire season can extend much longer into the summer months if rainfall is delayed.

The accepted understanding of fire seasons in Queensland is the widely circulated description developed by Luke and McArthur in the 60s and 70s. Luke described the “march of fire seasons”, commencing in winter in northern Australia and progressing to summer in southern Australia.

(Article continued on page 5)

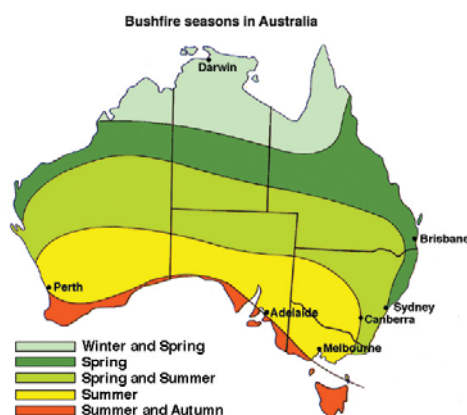
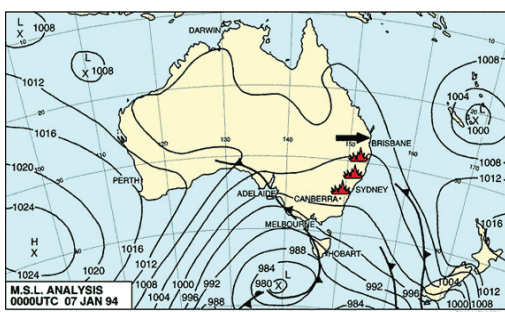


Figure 1 Pattern of seasonal fire occurrence in Australia (Luke and McArthur, 1978) (Source: CSIRO – Months of a Fire Season <http://www.csiro.au/Outcomes/Environment/Australian-Landscapes/Fire-Season-Months.aspx> accessed 10.10.13, last updated October 2011.)



Historic Chart Analysis at 11am EDT on 7 January 1994, showing areas with extreme fire weather that resulted in serious bushfires in NSW and southern Queensland. (<http://www.bom.gov.au/weather-services/bushfire/about-bushfire-weather.shtml> accessed 10.10.13)

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# Editorial

Welcome to the first newsletter of the SEQFBC's Phase 5. The SEQFBC has been operating for over 15 years now and this reflects the amount of support from our sponsors over that time. Sam and I are thankful for the volume of work that past coordinators and working group members have made since Phase 1 and as you will read in the snapshot of achievement since May the enormous amount of work that is continuing in order to translate science into practice to improve fire management and biodiversity conservation in SEQ.

Again we are proud to be hosted by SEQ Catchments who have taken out the Australian Business Awards under the category Environmental Sustainability for the 2nd year in a row and SEQC also took out a Healthy Waterways award.

In this edition we are starting on a series of articles from QPWS Principal Conservation Officer, Fire Management Peter Leeson on Fire Weather in Queensland. The article featured is an excerpt of a longer article that will be made available on our website. The first article is on Queensland's fire Seasons.



Dr Samantha Lloyd and Craig Welden

## Who are we?

Established in 1998, the South East Queensland Fire and Biodiversity Consortium (SEQFBC) is a network of land managers and stakeholders devoted to providing a coordinated response and best-practice recommendations for fire management, fire ecology and the conservation of biodiversity in the South East Queensland (SEQ) region through education, community engagement and applied research.

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Please note:

Samantha works Monday, Wednesday and Thursday.

Craig currently works Tuesday through to Friday.

Two new research projects, one highlighted by Dr Penny Watson (original SEQFBC Coordinator) on the Eastern Bristlebirds and the 2nd by Mr Mark Panter (foundational member of SEQFBC) talks of new research on Brush-tailed Rock Wallabies and bushfire.

Sam reviews a recent paper about house loss, and nearby bushland and associated risks. We highlight some of the work we have been up to including writing a book section, upcoming events, the new QPWS planned burn guidelines, the review into Queensland Fire and Rescue Service (QFRS), and much more.

I hope you enjoy reading the newsletter as much as we have in compiling it. We welcome any feedback.

Kind Regards

*Craig Welden*

SEQ Fire and Biodiversity Consortium Coordinator

## SEQFBC Enters Phase 5 and Welcomes a New Sponsor

By Dr Samantha Lloyd

At the first Steering Committee meeting of 2013 (February 27th) the issue of Phase 5 was discussed and the members of the Steering Committee (representing six local governments, two state government agencies and Powerlink Queensland) agreed to support the SEQFBC for another three years (July 2013 - June 2016) as Phase 5. Following this meeting, the SEQFBC Manager and Chair of the Steering Committee drafted a letter to the CEO of SEQ Catchments (the regional Natural Resource Management body for SEQ and current host of the SEQFBC), outlining the current terms of the hosting arrangement, achievements over the past 3 years and requesting a continuation of the hosting arrangement.

Following on from this letter, the SEQFBC are thrilled to announce that SEQ Catchments (SEQC) have agreed to continue the hosting arrangements for Phase 5. The SEQFBC would like to take this opportunity to thank SEQC, the SEQC Board, SEQC CEO Simon Warner and Performance Manager Noel Ainsworth for agreeing to continue the generous hosting arrangements and providing ongoing support to the SEQFBC. The SEQFBC would also like to recognise the valuable contribution of the SEQC finance and administrative team and other staff, including Community Partnerships Managers, Property Management Planning Team, the GIS/mapping team, Executive and the Traditional Owner Manager and the Land for Wildlife Regional Coordinator. The SEQFBC staff and Steering Committee remain excited about the prospect of Phase 5 and further opportunities for beneficial partnering arrangements.

The SEQFBC are also very pleased to report that a new partner has joined for the 2013/2014 financial year and we warmly welcome South Burnett Regional Council on as a sponsor. The SEQFBC Manager and Coordinator would like to thank Denise Whyte and Greg Griffiths for facilitating this new partnership and for the ongoing interest in the SEQFBC. The SEQFBC look forward to furthering this relationship and bringing SEQFBC to the South Burnett region. This brings the total number of sponsors for the SEQFBC to 17 (refer to back page). This impressive list of 17 supporting organisations reflects the broad support the SEQFBC possesses in SEQ and demonstrates its active and dedicated membership.

# Runs on the Board

## Snapshot of what we have achieved since May 2013

By Craig Welden

What a busy year this has been. Sam and I along with the support by SEQFBC's working groups have been very busy spreading the message of improved fire management and biodiversity conservation throughout SEQ.

We have delivered our workshops and talks to over 120 people, which has included people who live in the Interface zone (I-Zone) between the suburbs and the bushland and the more rural properties within SEQ. We have received positive feedback from these workshops including: *"I have attended many workshops and this would have to be the most professional I have attended yet"; "very good topic, essential for anyone living on acreage"; and "We have already discussed this workshop with one of our neighbours. There will be a neighbourhood get-together in August which will give me opportunity to make more neighbours aware of a Fire Property Management Plan."*

We of course would not receive such positive feedback like this without the invaluable support we get from Local government Officers, QFRS and Rural Fire Service Queensland (RFSQ). Since our presentation to QFRS RFSQ Voluntary Community Educators (VCE) workshops in March this year we have had a great level of support from the VCE's for our workshops and talks. We believe that the VCE program within SEQ is extremely valuable in promoting the "prepare act survive" message to landholders. We look forward to a working with this dedicated bunch of volunteers.

We were fortunate again to have Francis Hines, the co-author of the "Overall hazard fuel guide" come up and deliver four consecutive one day workshops to over 110 participants. This year Francis was joined by Tim Killen, QPWS Enhanced Fire Management Training Instructor who provided invaluable Queensland case studies and practical application of the guide to SEQ. See the full report on the training on Page 4.

QFRS's Andrew Sturgess and Graham Martin provided over 35 participants with an overview of Fire Weather 1 in a one day program. Five lucky SEQFBC members participated in a fire weather 2 two day training course under the instruction of Bureau of Meteorology Severe Weather Forecaster Mr Kevin Parkyn.

We were invited to write a new Fire in the Landscape and Fire and Grazing chapters for the recently released joint SEQC and Somerset Regional Council publication, "Living in Somerset". See page 6 for more information. We also provided an article for the Australasian Plant Conservation bulletin and can be viewed at <http://search.informit.com.au/documentSummary;dn=527241110736903;res=IELHSS>

Sam has presented at two well attended conferences; the Nature Conservation Council of NSW Bushfire 2013 Conference and the Queensland State Landcare Conference. Sam has provided a report on each of these on pages 5 and 6.

Our Forum held in May this year at Beerwah titled "Linking Traditional Owner & Western Fire Management" was attended by over 90 people. Find more on page 7.

The Australian Government's "Caring for our Country" funded project "Helping landholders improve habitat for endangered

species in the border ranges" in which we and SEQ Catchments have been implementing on the Queensland side of the Border Ranges is nearing its completion. This is a joint project in association with the Nature Conservation Council of NSW Hotspots Program of whom are implementing the on ground projects on the NSW side of the border. SEQ Catchments Community Partnership Manager Colin Hastie and Biodiversity Conservation Manager Liz Gould have provided an enormous amount of support to the landholders involved in this project to ensure that the project aims have been achieved. Stay tuned for more information once the project is complete.

We are continuing to deliver on a weekly basis our E-newsletter to over 450 people which we have received positive feedback about including: *".. and keep up the good work on putting these E-news emails together. I often find something unexpected and interesting in these."*

Since meeting early this year participants in our research working group have collaborated on new projects including the one highlighted on page 4 – "Brush-tailed Rock Wallabies and bushfire".

We have also released expressions of interest for the SEQFBC's Research Student Scholarship Program for 2013/2014. The SEQFBC acknowledge the kind philanthropic donation from Fireland Consultancy towards this scholarship.

Thank you again to our Working Groups for their valuable support and to the Steering Committee in their direction of the SEQFBC.

The above is but a snapshot of what we have been up to. If you are interested in the full picture of what we do please download our annual reports available on our website on the page Steering Committee and Working Groups.

[www.fireandbiodiversity.org.au/steering.html](http://www.fireandbiodiversity.org.au/steering.html)

## Grassy 'islands' as a key to survival for the Northern population of Eastern Bristlebirds

By Dr Penny Watson, NSW Office of Environment and Heritage (OEH)

Alongside rainforests in the high country of SEQ and Northern NSW (e.g. Border Ranges, Main Range) are naturally-occurring patches of dense native grasses. Many of these patches have a eucalypt overstorey; some are, or were, open grassland. Many occur on basalt-derived soils where rainfall is relatively high.

These grassy patches are key habitat for the northern population of the Eastern Bristlebird (NEBB). Over recent decades, NEBB numbers have fallen considerably; concurrently, the condition, extent and connectivity of grassy patches has declined. While clearing and weed invasion have taken a toll, existing research suggests the primary culprit is insufficient fire.

The NSW Environmental Trust has recently funded a "grassy islands" project which aims to better understand the fire-related dynamics of these patches, and how changes in vegetation are linked with changes in NEBBs. Ecological and historical evidence will be brought together and used to formulate fire regime guidelines.

People involved in this project include Lynn Baker from the Coffs Harbour office of OEH; Dr Liz Tasker, from the OEH fire ecology unit; and Dr Martine Maron from the University of Queensland. Martine and Liz will be supervising PhD student Zoe Stone, who will be starting soon: Zoe's work will focus on NEBB food resources, particularly invertebrates. I have been employed to work on vegetation dynamics, and have been checking out study sites, reviewing literature, and exploring methods. Many people, on both sides of the border, have already helped out – a huge thankyou to all!



# Upcoming events

## SE Queensland Fire and Biodiversity 2013 Spring Forum

7 November 2013 Mount Coot-tha Botanical Gardens, Toowong

At our spring forum we will hear from local ecologist Dr Rod Fenseham's view on the recent book by historian Bill Gammage "the biggest estate on Earth". Dr Tom Lewis will be reporting on findings from his research into frequent and infrequent fire in wet and dry eucalypt forest within SEQ. Other topics include an synopsis of the roadside burning in SEQ with two great examples; an update from the Queensland Government on the statewide bushfire prone area mapping; the new Next Gen forecasting systems by BOM; the role of fire in maintain grassy habitats for the Eastern Bristle Birds and staying with birds .. the influence of mosaic burning on bird diversity.

More: [www.fireandbiodiversity.org.au/events.html](http://www.fireandbiodiversity.org.au/events.html)

## International Smoke Symposium

October 21-24, 2013 University of Maryland, Adelphi

As the extent of global wildland fire and smoke increases, changes in air quality and climate will result in greater threats to human health, ecosystems, and infrastructure in the United States and internationally. The International Smoke Symposium will provide a venue to explore the complex issues surrounding wildland fire and smoke; discuss different management strategies adopted around the world; and identify knowledge gaps within the field of smoke science for future research, innovation, and development. For the Australian audience you can participate through their Virtual Conference, which will cost \$95.00 per participate.

More: [www.iawfonline.org/2013SmokeSymposium/index.php](http://www.iawfonline.org/2013SmokeSymposium/index.php)

## Brush-tailed Rock Wallabies and bushfire

By Mark Panter, Ipswich City Council

Ipswich City Council, the University of Queensland and the SEQFBC have partnered in a study examining the impact of bushfire on Brush-tailed Rock Wallabies (*Petrogale penicillata*).

The study is being undertaken in the Flinders-Goolman Conservation Estate at Ipswich and focuses on bushfire history and rock-wallaby distribution and abundance. Local bushfires in 2012 destroyed rock-wallaby feeding grounds and historical den sites were abandoned. The status of rock-wallabies was unclear raising concerns for their long term viability.

Known rock-wallaby habitat burnt in 2012 is being compared with matching areas unburnt for 10 years. Field investigation sites are trialling a range of survey and monitoring techniques. These include the presence/absence of the target species recorded as either visual observations, on camera traps or as scats (droppings) with additional counting and ageing of scats along formal transects.

Field work is still in progress however some decline in rock-wallaby presence is indicated at sites burnt in 2012 with low level revisitation ongoing. It is anticipated that further monitoring will be required to build a greater understanding of re-colonisation post-fire and inform fire management practices sympathetic to the species.



Figure 2 Brush-tailed Rock Wallaby visiting a den site post-fire.  
Photo Mark Panter

# SEQFBC's 2013 Fuel Hazard Assessment Training

By Craig Welden

Training was provided for our sponsors/contributors on the application of the "Overall Fuel Hazard Assessment Guide" (4th edition) by Francis Hines of the Department of Sustainability and Environment Victoria and Tim Killen, QPWS Enhanced Fire Management Training Instructor.

Francis and Tim provided a very engaging one day training session repeated over 4 days within the same week for 110 participants. The course was split over two venues to allow flexibility of travelling to the venues for participants. Thanks to Redland City Council for providing one of the venues.

Francis took participants through where fuel fits in the context of overall hazard assessment. Participants then learnt about the fuel layers and their contribution to fire behaviour. Participants were given tips on how then to assess the fuels in the field using the guide. Francis challenged participants to look at the way fuel is arranged rather than just fuel load expressed as tonnes per hectare.

Tim gave participants examples of assessing fuel loads and the dangers that inconsistent assessment can bring to staff and the environment.

Some of the positive comments made by participants include: "course was excellent; Francis and Tim demonstrated excellent training skills and I learnt a lot"; and "very informative and was explained in a manner to suit a wide audience".

We are scheduled to hold this popular course again next year as Francis has indicated that he would be available again. Thanks go to Tim Killen and Francis Hines for giving of their time and sharing their invaluable knowledge with SEQFBC members.



Francis Hines, co-author of the "Overall fuel hazard assessment guide" delivering the SEQFBC Fuel Hazard Assessment training to participants at Indigiscapes Environmental Centre, Runnymede.

# Queensland's Fire Weather

## Part 1 - Fire Seasons

(Excerpt – full article can be found on the SEQFBC website)  
**By Peter Leeson, Queensland Parks and Wildlife Service.**

Excluding fire activity and considering fire weather conditions only, it is possible to determine the fire seasons based on the likelihood of severe fire weather. Recent work by Dr Chris Lucas (Bushfire CRC) has allowed the examination of 38 years of daily weather and fire danger data for 19 sites around Queensland. Using the number of days per month when forest fire danger index (FFDI) or grassland fire danger index (GFDI) exceeds an appropriate threshold, such as 25+ (V High) for coastal areas or 50+ (Severe) for inland areas, periods of higher fire risk are identified. Seasons can also be compared across Queensland. For South East Queensland, based on this method and definition of the fire season, a greater number of bad fire weather days occur earlier in the season, peaking in September. Of note is that August also has a significant frequency of bad fire weather days, bringing with it a greater likelihood of reights and escapes associated with August burning. An example of this is the chart for Amberley (shown in Peter's original article which can be found on the SEQFBC website).

It should be noted that fire seasons as described here are based on average conditions and do not have a fixed start and finish date. Linked to this increasing fire risk are specific declared

periods which may have particular operational implications. Queensland Fire and Rescue Service sometimes declare a Fire Danger Period, which when in place influences the requirements for permits to light fires. QPWS also annually declares a fire risk period based on the current seasonal conditions, which guides the internal reporting, preparedness, and burn approval arrangements for the Agency. Other agencies adopt similar permanent or variable internal arrangements such as termination of burning at the end of August. These are sometimes considered de facto fire seasons and can confuse the understanding of what or when is the fire season.

In conclusion, the fire seasons for Queensland can be defined by either the likelihood of fires, or the likelihood of bad fire weather. There is an increasing risk of severe fire weather commencing in August, and an increasing frequency and extent of fires in October - November. Fire seasons tend to vary between coastal (shorter and peaking earlier) and inland regions (longer and peaking later). A better understanding of seasonal patterns will improve the risk management of late winter burning, or early commencement of summer burning.

## Nature Conservation Council of NSW Bushfire Conference 2013

### Fire and Healthy Landscapes: resilient environment, resilient people

**By Dr Samantha Lloyd**

On June 4th and 5th the Nature Conservation Council of NSW hosted the 9th Biennial Bushfire Conference. The theme of the conference was "Fire and healthy landscapes: resilient environment, resilient people". The conference was well attended and showcased a range of keynote speakers and interesting topics. The Tuesday Keynote Speakers were Mr Paul Ryan from Interface Natural Resource Management environmental consulting and Mr Mark Tozer from the NSW Office of Environment and Heritage. Mr Ryan delivered a very interesting talk on resilience thinking and how this is gaining momentum with regards to managing natural resources and landscapes. Mr Tozer spoke about managing the community (and land manager) debate around "good fire versus bad fire", how this is linked with sustainable resource management and how to balance this with calls for greater hazard reduction burns following major wildfires.

Wednesday Keynote Speakers were Dr Tein McDonald, regarding her work with the Minyurni Land Holding Aboriginal Corporation and Dr Trent Penman from the Centre for Environmental Risk Management of Bushfires, at the University of Wollongong. Dr McDonald spoke about resilience, links to climate change and common misconceptions around the use of terms such as 'improving resilience' and confusing this with adaptability. Dr Penman did a fantastic talk on who and how the risk of house loss from bushfire can be reduced and how there is a great need to better understand what strategies provide the greatest reduction in risk. He presented results from case studies showing that fuel reduction treatments at the interface are far more effective than landscape fuel treatments and actions at the house level are also extremely valuable.

Excellent talks were also presented by Dr Richard Williams (CSIRO) who spoke about interactions between climate change, fire regimes and biodiversity; Assoc. Professor Alan York (University of Melbourne) who spoke about defining vegetation age classes for maximising species diversity conservation and ecological resilience; Mr Oliver Costello (Nature Conservation Council NSW) who spoke about the 'Firesticks' project working with Traditional Owners on cultural burning; Dr Simon Heemstra (NSW Rural Fire Service) who spoke about the Building Impact Analysis program that aims to collect community information after an area has been impacted by a fire and how this can improve outcomes from future fire events.

I was also presented a talk in the session entitled "Good Fire versus Bad Fire – Managing fire to meet desirable local outcomes". I gave a brief overview of how the SEQFBC works and the services and products provided and more specifically showcased the SEQ Roadside Burning Project finalised in 2012. The talk was followed by many enthusiastic questions, lots of positive feedback and requests for further information, an excellent result.

Abstracts of the Bushfire 2013 can be found at:  
<http://nccnsw.org.au/programs/bushfire-conference-2013>

# Living in Somerset

By Dr Samantha Lloyd

## Property Management Handbook

Somerset Regional Council and SEQ Catchments have recently launched a fantastic new publication entitled "Living in Somerset - Property Management Handbook". The booklet is a very handy A5 size and ring-bound, so perfect for keeping in the car or using whilst out on site or on your property. The publication provides general information on land, water, vegetation management and of course, fire, for land owners and residents of the Somerset region. The SEQFBC are very pleased to report that we were a partner in the publication, being invited to write the section dedicated to fire ecology and management, which also includes information on fire and grazing.

The booklet comprises five chapters: (1) Why manage natural resources; (2) Natural resources; (3) Practical consideration for managing your property; (4) Property management planning and (5) Landholder responsibilities. It also includes six appendices with useful information on topics like soil type, endangered and vulnerable flora and fauna species, regional ecosystems, habitat management and native plants to encourage wildlife. Chapter 3 covers a variety of useful information on property management, including soil erosion, salinity, grazing, water, biodiversity, weeds/pests and fire. The sub-section on fire is dedicated to general information on

fire and the Australian landscape, including flora and fauna responses to fire, the four key components of a fire regime (i.e. frequency, extent, season and intensity), recommended fire regimes, fire management planning and fire and grazing.

Somerset residents are encouraged to collect a hardcopy of the booklet from their nearest council office or library. Non-residents are invited to download copies of the publication from the Council website ([www.somerset.qld.gov.au/land-management](http://www.somerset.qld.gov.au/land-management)). For all other enquires please contact Somerset Regional Council on: 07 5424 4000 or contact our office on: 07 3503 1415.

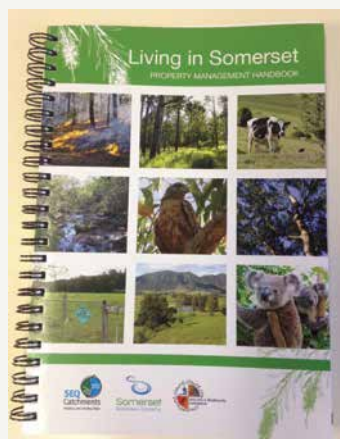


Figure 3 The new Living in Somerset and hand book for property management for residents within Somerset Region. SEQFBC wrote the section on fire management.

## Queensland Landcare Conference 2013: Healthy habits, profitable production

By Dr Samantha Lloyd

On September 27th to 29th the Condamine Headwaters Landcare Group hosted the Queensland Landcare Conference in Warwick. The theme of the conference was "healthy habits, profitable production". SEQFBC Manager, Dr Sam Lloyd was invited to coordinate a symposium on fire. After discussing the idea with the SEQFBC Steering Committee it was decided this provided the SEQFBC with an excellent opportunity to reach a different audience just south west of the SEQ region.

The symposium was designed to provide three talks, each with a different perspective and scope of fire management and fire in the landscape. Private landowner Ben Barton did an excellent presentation entitled "Bushfires and the Landowner", which focussed on his experience as a new landowner, managing a large, high fire risk property for eco-tourism.

I followed Ben with a talk entitled "Integrating Biodiversity Conservation and Fire Management in SEQ: the SEQFBC Model", which showcased the work the SEQFBC was doing with private landowners, public landmanagers and research bodies.

Andy Houley from Reef Catchments NRM group did a fantastic presentation entitled "Fire as a Land Management Tool in Primary Production", which focussed on his extensive experience managing fire for sustainable agriculture and the environment, in particular grazing. Each talk was followed by many enthusiastic questions, a thoroughly engaged audience and the symposium received very positive feedback. A very big thank you is extended to Ben and Andy for giving up their time to prepare and present their talks and for the support they provided to the SEQFBC in doing so.

## Police and Community Safety Review

By Craig Welden

In September the Premier of Queensland the Hon Campbell Newman and Minister for Police and Community Safety the Hon Jack Dempsey released the final report from a review into Police and Emergency Services in Queensland including the Queensland Fire and Rescue Service.

The Queensland Government commissioned the former Australian Federal Police (AFP) Commissioner Mick Keelty to undertake a review of the Police and Community Safety portfolio.

The review follows on from the Ted Malone review into the Rural Fire Service Queensland and of the 91 recommendations from the Ted Malone Review some have been supported, some under investigation while others have not been supported. To see what the Police and Community Safety Review's response to the Ted Malone review please look at Annexure 3 from page 303- 329.

Some of the key recommendations from this review that are related to Fire Management include:

A large part of Emergency Management Queensland will be integrated into a new department named Department of Fire and Emergency Services (DFES). This new department will be headed by the current Fire Commissioner Lee Johnson and will include a dedicated Deputy Commissioner Rural Fire Service and State Emergency Service to manage volunteers and Deputy Commissioner Operations to manage the urban fire stream and emergency management.

A new Inspector for General Emergency Management has been created who will be responsible for setting standards, auditing and monitoring performance of agencies involved in the preparedness and management of disasters and emergencies.

The review also recommended the approach that NSW RFS makes in incorporating a senior Bureau of Meteorology severe weather forecaster into State Disaster Coordination Centre for a minimum of the duration of the fire and storm seasons.

Copies of the review can be found at: [www.premiers.qld.gov.au/publications/categories/reports/police-community-safety.aspx](http://www.premiers.qld.gov.au/publications/categories/reports/police-community-safety.aspx)



## QPWS new planned burn guidelines released for SEQ

By Craig Welden

The Queensland Parks and Wildlife Service released their new state wide planned burn guidelines in August this year. Guidelines have been produced for each of the bioregions across the state including SEQ.

The guidelines are available free for download and provide QPWS staff, other Government Land managers and private land managers a guide to their use of fire in the landscape by encouraging land managers to read country and use adaptive management principles.

The guidelines are broken up into descriptions for each of the broad vegetation groups that are found within SEQ and associated considerations that are specific to the conservation of each of these vegetation groups.

QPWS have also produced a booklet "Planned Burn Guidelines – how to assess if your burn is ready to go" and QPWS planned burn fire behaviour tables which are great companions for the planned burn guidelines. These are also free to download from the NPRSP web site:

[www.nprsr.qld.gov.au/managing/pdf/pbg-assess-pocket.pdf](http://www.nprsr.qld.gov.au/managing/pdf/pbg-assess-pocket.pdf)

[www.nprsr.qld.gov.au/managing/pdf/pbg-assess-a5.pdf](http://www.nprsr.qld.gov.au/managing/pdf/pbg-assess-a5.pdf)

[www.nprsr.qld.gov.au/managing/planned-burn-guidelines.html](http://www.nprsr.qld.gov.au/managing/planned-burn-guidelines.html)

Well-done to the Team in QPWS for their work on the guidelines.

## Linking Traditional Owner & Western Fire Management

By Craig Welden

In May this year 90 people were treated to a forum at Beerwah on linking traditional owner use of fire and western fire management.

Mr David Calland, Natural Resource Officer - Indigenous Engagement, Department of Natural Resources and Mines lead proceedings as the Master of Ceremonies. Participants were inspired by a great line of speakers such as Maurice Mickelo, Burnett Regional Group. Mr Mickelo (is a descendant of the Waka Wakka and Kabi Kabi people) spoke of the Bunya Mountains fire management project which involves integrating traditional knowledge and contemporary land management practices in caring for this iconic cultural landscape.

Oliver Costello travelled up from NSW to provide an overview of Fire Sticks Program that He is coordinating for the Conservation Council of NSW. The project aims to enhance biodiversity, connectivity and landscape resilience by applying contemporary and aboriginal fire into country.

Andrew Houley of REEF Catchments NRM spoke of his work with traditional owners in the Gulf Savanna in the development of fire management guidelines. John Locke of BioCultural Consulting spoke of brokering successful traditional and contemporary indigenous cultural partnerships.

Bernard Trembath of Queensland Fire and Rescue Service (QFRS) provided a history of the use of fire in Queensland from traditional owners and early Europeans. Fergus Adrian of QFRS provided an update of predicted fire weather.

We would like to thank those on the organising committee; Jacqueline Nolen & Michael Reif of Sunshine Coast Regional Council and David Calland for their assistance with organising and hosting the Forum.

| Paper review cont'd from page 8

### Land Management Practices Associated with House Loss in Wildfires.

By Dr Samantha Lloyd

Overall, the authors found that modifying key fuels within close proximity (<40m) of houses could substantially reduce house loss during wildfires in extreme weather conditions. This also extends to a reduction in loss of life as many deaths occur when people shelter in a house that is exposed to flames and subsequently ignites (69% of lives lost during the 2009 wildfires examined in this study were in houses). The authors suggest that their results support a move from broad-scale fuel reduction management actions to intensive hazard reduction activities closer to properties. Issues of concern with the application of these recommendations are recognised by the authors, including the reality that maximum fuel reduction activities are unlikely to be possible at every at risk property due to funding/resourcing, access and other environmental and logistical reasons.

Whilst issues of resourcing and the reality of substantial fuel reduction in close proximity to houses is a serious consideration for public land managers, this paper also highlights the opportunities that exist for those of us working with private landowners and the community. Private landowners are able to examine options for modifying fuel within close proximity to their home, without necessarily compromising the ecological

and aesthetic values for which they purchased the property. As the paper shows, planted native vegetation does not pose the same level of risk and provides opportunities for landholders to reduce high risk vegetation in place of planted vegetation. The SEQFBC will be taking the findings from this paper into consideration with the current review of the manual for the Fire Management Planning Workshops for private landholders. Landholders are also encouraged to refer to the document "Landscaping for Bushfire", published by the Victorian Country Fire Authority ([www.cfa.vic.gov.au](http://www.cfa.vic.gov.au)).



Figure 5 In the paper by Gibbons et.al researchers have found that modifying key fuels within close proximity of houses could substantially reduce house loss. The owner of this house within SEQ could take some valuable lessons from this research if they are to protect their house.  
Photo Craig Welden

# Paper review

## Land Management Practices Associated with House Loss in Wildfires.

By Dr Samantha Lloyd

Gibbons, P., van Bommel, L., Gill, A. M., Cary, G. J., Driscoll, D. A., Bradstock, R. A., Knight, E., Moritz, M. A., Stephens, S. L. and Lindenmayer, D. B. (2012) Land Management Practices Associated with House Loss in Wildfires. PLOS one (7) 1.

This freely accessible and very practical paper examines the relationship between house loss, fuel characteristics and vegetation features as related to different fuel management treatments. The paper looks at the effectiveness of some current management regimes and proposes a series of recommendations, as identified from research arising from the tragic Black Saturday bushfires. Specifically, the authors predicted that *"modifying several fuels could theoretically reduce house loss by 76% - 97%",* this in turn reducing loss of life.

Houses destroyed during wildfire are due to: (1) exposure to flames in adjacent fuels; (2) radiant heat from nearby fuels (typically less than 40m); and (3) airborne embers and firebrands from nearby and distant fuel (typically <10km). However, wildfires are very difficult to study and so the importance of these different fuels and effectiveness of different treatments is relatively unknown. The authors identify that current fuel reduction activities are commonly broad-scale and at a distance (mean distance of 8.5km from houses in this study) from peri urban communities. Moreover, evidence that such fuel reduction activities mitigate impacts on peri urban communities are limited.

In this study the authors sampled 499 houses to quantify the effects of different fuel types on house loss. At each house they recorded 24 potential variables representing the key aspects of fire behaviour (i.e. weather, terrain and fuel) that may help explain house loss. Predictions for each fuel variable were made with the Forest Fire Danger Index (FFDI) held at 100 (this being the value for FFDI above which 64% of houses have been destroyed in Australian wildfires).

A logistical regression model with eight significant explanatory variables was used to predict house loss. The model indicated that the most significant fuel variables leading to a greater proportion of house loss were: (1) where there was a higher percent cover of trees and shrubs within 40m of dwellings; (2) where trees and shrubs within 40m of dwellings were dominated by remnant native vegetation rather than planted; (3) where there were more buildings within 40m; (4) where groups of trees or shrubs were clustered together in the upwind direction; (5) where the upwind distance from houses to prescribed conducted within 5 years was distant rather than close; and (6) where dwellings were closer to public forested land (i.e. less private land) in the upwind direction. An alternative model also indicated that houses were at a similar risk when they occurred close to either national parks or state forest.

Unsurprisingly, the authors found that weather had a strong effect with more houses lost at higher temperature and wind speed and lower relative humidity. None of the variables representing terrain were significant in the selected model.

The fitted logistic model also indicated that reducing fuel could substantially reduce the number of houses destroyed during severe wildfires. Specifically, the authors found that minimising key fuels at every house could potentially reduce the per cent house loss from the observed value of 35% to a predicted mean of 4.6% (+/- 1.9% standard error mean). This equates to a reduction in house loss of 76% - 97% (with a 95% confidence interval). However, the amount of fuel reduction required to achieve this also equates to serious vegetation loss and therefore, requires consideration of other ecological consequences. The authors predicted that reducing native vegetation within 40m around houses from 90% cover to 5% cover reduced the likelihood of house loss by 43%. Therefore, every 10% reduction in remnant native vegetation cover within 40m of houses reduces the likelihood of house loss by approximately 5%. Moreover, 38% fewer houses were destroyed if surrounded by primarily planted vegetation, rather than remnant native vegetation. However, given many people move to peri urban areas to be *"closer to the bush"* and have more vegetation around them this is not necessarily going to be a management recommendation well received by all landowners. It does, however, present people with indisputable facts and once provided with the information people can consider their options and the consequences and ideally work with their local Rural Fire Brigade and organisations like the SEQFBC to plan options to reduce their risk.

In terms of distance to areas of prescribed burning and public forested areas, the authors found that (1) 14% fewer houses were lost if located 200m from public forest, rather than 10m; (2) 26% fewer houses were lost if 2km from public forest; and (3) on average 15% fewer houses were lost if prescribed burning within 5 years was undertaken 0.5km upwind from houses (the nearest distance between houses and prescribed burning), rather than 8.5km upwind from houses (the average distance between houses and prescribed burning). Importantly, the authors found that the proximity to houses of prescribed burning was more important than the total percentage of the landscape that is prescribe-burnt.

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