

# SEQ Fire & Biodiversity consortium

ISSUE 2 2015

**Translating science into practice for improved fire management  
and biodiversity conservation in South East Queensland**

## *Bushfire 2016: Connecting Science, People and Practice*

**By Sam Lloyd, SEQ Fire and Biodiversity Consortium Manager**

A decade after the SEQ Fire and Biodiversity Consortium (SEQFBC) hosted the very successful 2006 BushfireConference, we are thrilled to announce that next year we are hosting "Bushfire 2016: *Connecting Science, People and Practice*". Set to be the premier bushfire event of 2016, this national conference will feature internationally recognised keynote speakers, including:

- Professor Ross Bradstock. Director - Centre for Environmental Risk Management of Bushfires, University of Wollongong;
- Dr Neil Burrows. Senior Principal Research Scientist - Department of Parks and Wildlife, Western Australia; and
- Associate Professor Alan York. Head - Fire & Biodiversity Research Program, University of Melbourne.

With a focus on applied fire ecology and fire management research, and collaborative fire projects, we aim to showcase successful partnerships that translate science into practice for beneficial onground fire management and environmental outcomes, whilst supporting land owners, land managers and scientists. Themes that have been proposed for inclusion as symposia include: fire ecology; Traditional Owner led fire projects; fire management for linear corridors; climate change, soils and fire; fire and land management and collaborative fire projects (i.e. successful stakeholder and community engagement). We aim to open the call for abstracts in March next year.

Following on from our very successful Autumn and Spring Forum series, we expect to see a wide range of badges and uniforms in our audience, including researchers, local government, state government agencies, infrastructure organisations, natural resource management bodies, Traditional Owner groups, students, land holders, conservation and other community based organisations.

We are thrilled to announce that Fireland Consultancy will joining us as a Gold Sponsor and SEQ Catchments as a Silver Sponsor. We expect to have at least one more Gold Sponsor and several other Silver and/or Bronze Sponsors and will be announcing those as they are finalised. We are also very pleased to be holding the conference at the University of Queensland. With a beautiful campus, easy access to transport and great catering we should be all set for an inspiring and exciting few days of presentations, discussions and networking.

For more information please ensure you are signed up to receive our e news by visiting our webpage: [www.fireandbiodiversity.org.au](http://www.fireandbiodiversity.org.au). You can also email us at: [Bushfire2016@fireandbiodiversity.org.au](mailto:Bushfire2016@fireandbiodiversity.org.au) or call Sam or Craig at any time.

*We look forward to seeing you there!*



## Contents

- 1 Bushfire 2016: Connecting Science, People and Practice
- 2 Editorial  
Upcoming Events
- 3 Runs on the Board  
Fire and Weeds 2015
- 4 Fire regimes, ecological resilience and weed management  
ESA Conference 2015
- 5 Fraser Island historical fire regimes and charcoal analysis
- 6 Ongoing Studies of Rock-Wallabies in Ipswich  
QFES appoints new executives
- 7 SEQFBC hosts AFAC National Burning Project workshops on the Gold Coast  
Facilitating a biodiversity legacy for the South Burnett Region
- 8 Eastern bristlebirds, grassy patches and fire





# Editorial

## Welcome to the second edition for the year.

In this edition we are fortunate to have four guest contributors ranging from Ipswich City Councils work in the Conserving the Rock Wallabies in the Mt Flinders area, research into fire regimes and the Northern populations of the Eastern Bristlebirds, insights into Fraser Island historical fire regimes and charcoal analysis and a fire and weed practitioners long term observations of fire regimes, ecological resilience and weed management.

We also will be highlighting our achievements in the last 6 months.

I hope that you enjoy reading the newsletter. We welcome any feedback.

Kind Regards

*Craig Welden*

SEQ Fire and Biodiversity Coordinator

## 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.

## Contact details

All enquires please contact the SEQFBC

Craig Welden	Sam Lloyd
M. 0437 726 279	M. 0438 008 668
P. 07 3503 1415	P. 07 3503 1415
cwelden@seqcatchments.com.au	SLloyd@seqcatchments.com.au

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

Postal address and deliveries:  
SEQ Fire and Biodiversity Consortium  
Level 2, 183 North Quay  
Brisbane Q 4000

# Upcoming Events

By Craig Welden

## Bushfire 2016 Connecting Science, People and Practice

28-30 September 2016

With a focus on applied fire ecology and fire management research, and collaborative fire projects, we aim to showcase successful partnerships that translate science into practice for beneficial onground fire management and environmental outcomes, whilst supporting land owners, land managers and scientists. Themes that have been proposed for inclusion as symposia include: fire ecology; Traditional Owner led fire projects; fire management for linear corridors; climate change, soils and fire; fire and land management and collaborative fire projects (i.e. successful stakeholder and community engagement). We aim to open the call for abstracts in March next year. CLAIM this DATE!

To find out more: [www.fireandbiodiversity.org.au](http://www.fireandbiodiversity.org.au)

## National Seed Science Forum 2016

14 - 16 March 2016

Australian Botanic Gardens, Mount Annan NSW

The Forum will be a rare opportunity to bring together leading botanical and agricultural institutions, seed scientists, and conservation and restoration experts to share ideas that showcase the importance of seed science to the future of plant conservation and food security in Australia.

Read more: [seedpartnership.org.au/seedscienceforum](http://seedpartnership.org.au/seedscienceforum)

## 5th International Fire Behavior + Fuels Conference

12-15 April 2016

Melbourne, Australia

Wicked Problem, New Solutions: our fire, our problem

A highly educational/engaging and entertaining week featuring selected keynote addresses, numerous plenary, concurrent, and poster presentations, panel discussions, vendor exhibits/displays, and other special sessions (e.g. field trips, staff ride) that will advance the knowledge and practice of fire behavior and fuels management in the field of Wildland Fire and support sound choices in fire management.

Register here: [melbourne.firebehaviorandfuelsconference.com](http://melbourne.firebehaviorandfuelsconference.com)



# Runs on the board

## Snapshot of what we have achieved since July 2015

By Craig Welden

In the last 6 months we have delivered 5 workshops and talks that have been attended by over 360 people from across SEQ. And we are on track to have a very busy first half of the 2016 with 9 workshops already planned.

Bushfire 2016 Organising Committee have met and we have been able to secure sponsorship for the Conference as well as internationally recognised keynote speakers.

Our SEQFBC E-news continues to gain popularity (well above industry average open rates) with the subscription number over 700 now and 22 newsletters sent in the last 6 months. Positive comments about the E-news are regular such as (State Agency): *"congratulations on your work putting together these research summaries – you're doing a great job. Please keep it going!"*

Our very popular Overall Hazard Fuel Training is again on next year between the 24- 25th May 2016. Locations will be the Sunshine Coast, Toowoomba and Brisbane. We are again very lucky to have Francis Hines and Tim Killen as co presenters. Information about this training will be made available early in the New Year.

Sam attended and was the opening presenter for the symposia on *"better connecting fire science with onground fire management"* at the Ecological Society of Australia 2015 Annual Conference held in Adelaide. (See more on page 4).

This year we themed our Forum "Fire and Weeds" with the aim to look at the effects of fire on weed management. We had over 150 people attend from a variety of government agencies, industries, research institutions and volunteers and eight guest speakers. See more on the forum on this page.

As part of our service to our sponsors we have also provided summaries on three reports/enquires including Warrumbungle's Coroners Findings, The Burning Issue: Climate Change and the Australian Bushfire Threat, and Independent Investigation of the Lancefield-Cobaw Fire, Victoria September/October 2015.

We continue to stay in touch with our neighbours across the border with attendance at the Northern Rivers Fire and Biodiversity Consortium and the NSW Hotspots meetings. The SEQFBC is also part of the Interstate Fire Alliance, which meets three times per year (via teleconference) to discuss all matters relating to improved fire management across the landscape that balances fire safety, biodiversity conservation and ag industries.

This is but a snapshot of what have been up to please check out the full picture in our annual reports available on our website - [www.fireandbiodiversity.org.au/steering.html](http://www.fireandbiodiversity.org.au/steering.html).



**Photo:** Liane Henderson, Acting Bushfire Safety Officer, Rural Fire Service Queensland describing the fire danger ratings to participants of the Individual fire Management Property Planning Workshop, Ocean View. We are pleased to say that these workshops have become so popular in the Moreton Bay Region that they have waiting lists, and we even had some gate crashers.



**Photo:** SEQFBC Fire and Weeds Forum. 150 agency staff, researchers, land owners Traditional owners, RFSQ Volunteers and NGO staff listened to 8 presentations on the use of fire to assist in weed management (photo Craig Welden)

## Fire and Weeds 2015

By Craig Welden

Over 150 people attended the Forum held at the Mt Coot-Tha Botanic Gardens on the 29th October 2015 to hear researchers and practitioners observations. The forum also provided an opportunity for participants to discuss the topic of fire and weed management.

Kevin Taylor opened the forum as a key note and provided information on the New South Wales Nature Conservation Council and Rural Fire Service NSW project on *"Fire, weeds and healthy ecosystems, a review of current literature and practices across NSW"*. We look forward to reading the finished review.

Dr Tom Lewis, a research scientist from the Department of Agriculture and Fisheries (DAF) presented on the research into *Lantana camara's* response to frequent burning. Dr Lewis and his work partner Dr Valerie Debusse utilised the long term experimental sites in SEQ (50 years plus of long term fire experiments). We are fortunate to have these long term fire management research sites in SEQ. Dr Lewis's presentation can be viewed on our website.

We were all energized by Adrian Hansen passionate presentation on *"Fire regimes & ecosystem & weed resilience"*. Adrian has generously written an article which can be found on the following page.

Dr Paul Williams provided a summary of how differing fire regimes are being used to treat weeds and promote native flora. One of the best examples was the long term use of fire and grazing to treat Para Grass in the Townsville Town Common and the subsequent appearance of Wild Rice (*Oryza meridionalis*).

Peter Leeson provided a "cooks tour" of the weeds across the Queensland Parks and Wildlife estate and how fire is being used by its staff to assist in weed control and Dr Seonaid Melville presented on the Short & long term responses of weeds to prescribed fire in *Allocasuarina littoralis* forest.

Two local researchers, Martyn Elliott (SEQFBC Scholarship recipient) of the University of the Sunshine Coast and Orpheus Butler PhD Candidate Griffith University presented the great work that they are doing in SEQ.

For more information the Fire and Weeds forum please go to <http://www.fireandbiodiversity.org.au/pastConferences.html>. Here you can download 5 of the presentations.

# Fire regimes, ecological resilience and weed management

By Adrian Hansen – Ecological Natural Area Management

Weeds can be divided into three main types: scattered weeds, invasive weeds and ecosystem transforming weeds. Scattered weeds are equivalent to uncommon native species which have functional adaptations to a fire regime allowing them to occupy a small space (temporal or spatial) in ecosystems. Weeds can be similarly uncommon, dominant species have functional adaptations for dominance. For example, Kangaroo Grass (*Themeda triandra*) is a clumping native grass using its clumping adaptation to exclude other species, rapidly regrow clumps post fire and dominate an ecosystem with dense swards. Kangaroo Grass can be out-competed by a dominant, invasive weed such as *Paspalum dilatatum*. Paspalum clumps grow as fast as Kangaroo grass but it can also set larger amounts of more viable seed more quickly post fire.

Anthropocentric disturbance (such as changed fire regimes, livestock, additional nutrients) also aid Paspalum's invasion. Ecosystem transforming weeds change the disturbance regime. Para grass (*Urochloa mutica*) and Molasses grass (*Melinis minutiflora*) increase the intensity of a bushfire increasing its severity. This kills competitors, opens the canopy to more light changing the ecosystem to favour themselves over their native competitors. Asparagus Fern (*Asparagus aethiopicus*) transforms in the opposite direction forming a dense green ground layer that doesn't readily burn so a fire can't penetrate and pyrophyllic species are disadvantaged.

It has been suggested that we can use fire to treat weeds. For example, burning Molasses grass several times a year or using intense fires to kill *Lantana camara*. The science of ecological resilience suggests we should use disturbance regime manipulation for weed control as a last resort. Indigenous species have functional adaptations for the original fire regimes. Changing the fire regimes, even with the best of intentions to treat weeds, could disadvantage rare and uncommon species – the ones we most want to keep. We should always aim for a disturbance regime which maximises the resilience of native species. Because invasive weeds have a good (sometimes excellent) resilience response to the same regime, it is normally best to use more traditional bush regeneration methods. These methods aim to degrade the resilience response of the weeds so that the normal disturbance regime will favour the resilience of the natives over the weeds. For example the advantage of

Paspalum is early production of large amounts of high viability seed post fire. Degrade this resilience advantage by pulse grazing when it is flowering (within phenological constraints) or selective removal of Paspalum seed before a prescribed burn and then selectively spraying the Paspalum before it can re-set seed post fire. This also kills its clumps.

Overall to encourage a self-sustaining ecosystem, which is functionally integrated into the surrounding landscape, has a strong resilience response to the original fire regime, we therefore aim to degrade the vigour of the resilience response of the weeds so that the native species will "bounce back" more.



**Photo:** Four weeks following a prescribed burn within Belli Park Sunshine Coast Regional Council. Native species regenerated Kangaroo grass (*Themeda triandra*) Large bluegrass (*Ischaemum australe*) along with Paspalum (*Paspalum dilatatum*) Narrow leaf carpet grass (*Axonopus fissifolius*) that were easy to spot spray following the removal of the biomass (picture Adrian Hansen).

## ESA Conference 2015

### Excerpt from the ESA Conference Website:

In the first week of December, over 600 ecologists met in Adelaide for the annual conference of the Ecological Society of Australia, which showcases the best and most innovative ecological science in the nation. Acknowledging the recent tragedy of the Western and South Australian fires, the conference included a timely series of talks on better connecting fire science with onground fire management.

Manager of the SEQ Fire and Biodiversity Consortium (SEQFBC), Dr Sam Lloyd, was invited to speak at this dedicated symposium, entitled Fire Regime Management – connecting science and practice.

Sam opened the symposia by presenting a talk showcasing the work of the SEQFBC and the NSW Hotspots Project at better communicating fire science to land managers and landowners and helping to build partnerships and networks between

stakeholders for improved fire management and biodiversity outcomes. Sam shared her experiences and lessons learnt from successful collaborations between landowners, fire agencies and land managers. Sam focussed on engagement, knowledge brokering, supporting research and facilitating change, specifically highlighting the workshop program, biannual forums, research student scholarship program and roadside burning project. Sam also spoke about the Interstate Alliance and shared strengths and challenges of the various interstate programs.

*"The key is working with private landowners who own the vast majority of bushland in Australia and face an ever increasing threat from bushfire. There is an enormous amount of knowledge out there in the community and as scientists and land managers we need to get a lot better at building trust and initiating partnerships that empower landowners to better manage fire risk for the protection of life, property and the environment,"* said Sam.



# Fraser Island historical fire regimes and charcoal analysis

By Philip Stewart and Patrick Moss, University of Queensland

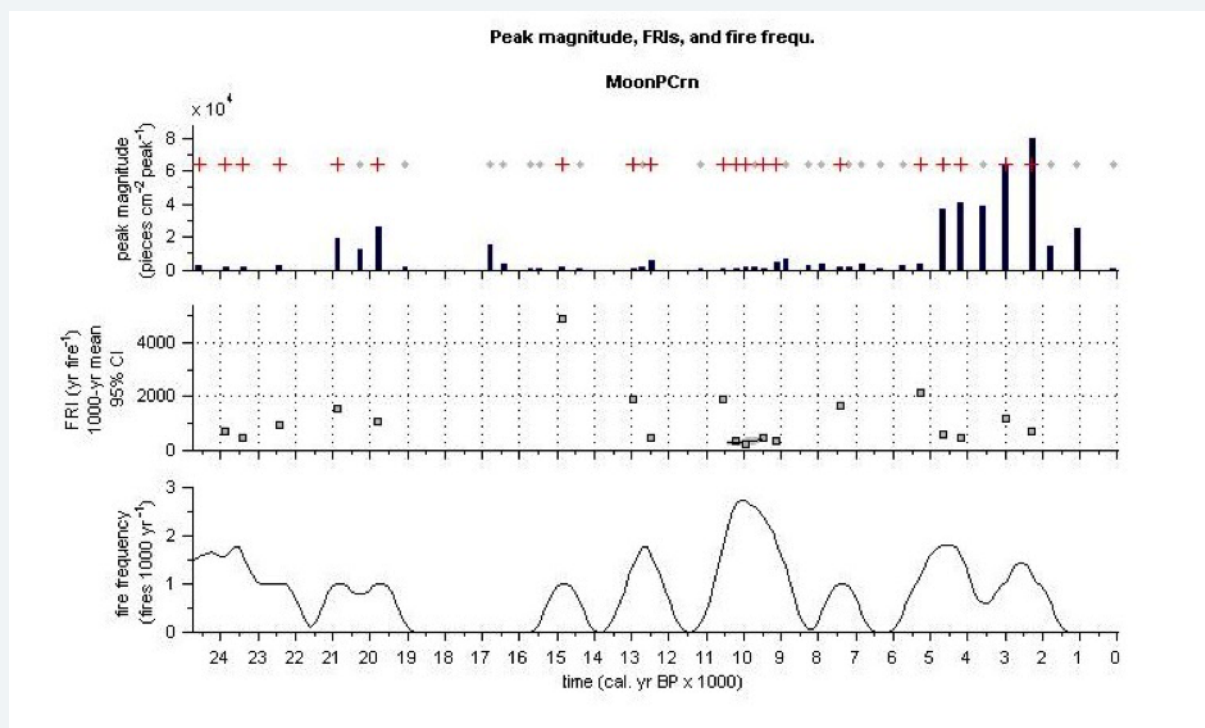
Charcoal records show that Fraser Island and in particular Moon Point has been exposed to fire for thousands of years acting as a major evolutionary driver of change for the constituent species of vegetation on the Island. Sediment cores were taken from Moon Point to analyse the macro-charcoal to ascertain frequency of fire and time between fire intervals (fire return interval) of the local fire regimes histories for Moon Point. A one cubic centimetre (1 cm<sup>3</sup>) sample was taken from every centimetre of the length of the core giving 150 samples for high resolution analysis of the macro charcoal. The analysis process followed the modified macro charcoal technique developed by Stevenson and Haberle (2005). Dating of sections of the sediment core for 14C were undertaken by the Australian Nuclear Science and Technology Organization and have been used in the development of an age-depth-model, using Bacon for the 150 macro-charcoal samples. Bacon is an age-depth modeller that uses Bayesian statistics to reconstruct Bayesian accumulation histories for deposits through combining radiocarbon dates (Blaauw and Christen, 2013).

The age-depth model created by Bacon was fed into CharAnalysis to analyse local fire histories of the Moon Point macro-charcoal for fire return intervals, fire frequency and charcoal peak magnitude (Figure 1). CharAnalysis is a set of diagnostic and analytical tools designed for analysing sediment charcoal records where the objective is peak detection to reconstruct local fire history (Higuera, 2009).

Default parameters for CharAnalysis were tested with the initialisation and execution of the model and were found to be robust and usable for the analysis of the Moon Point macro-charcoal. Parameters for smoothing were 500 years to smooth record over for estimating low-frequency  $C_{\text{background}}$  (CHAR) selection lowest smoother, robust to outliers, and peak analysis, peak frequency of 1000 years to smooth fire frequency and fire return intervals over to calculate high-frequency  $C_{\text{peak}}$  (CHAR), using ratios ( $C_{\text{peak}} = C_{\text{interpolated}} / C_{\text{background}}$ ).

The results of the macro-charcoal have provided for a provisional finding that the fire regime for Moon Point have fluctuated over 24000 years with low frequency fires and fire return intervals, however this has changed substantially with increasing fire frequency and return intervals in the last few thousand years that seems to correlate with climate change events with a drying of the island and sea level rise. During this period permanent settlement of the island is thought to have occurred due to sea level rise. Interestingly, there is evidence of increased fire frequency around 200 years ago which may correlate with the arrival of Europeans on the Island and the start of forestry and the slash-burn policy.

The next step within the research over the next few months is to simulate future fire regimes using FireBCGv2 fire simulation model, which has seen extensive work undertaken on map data, vegetation physiological parameterisation and model initialisation and execution.



**Figure 1.** Continuous fire history; peak magnitude, FRIs through time and smoothed fire frequency. The top graph provides a time series for peak magnitude charcoal, where the “+” symbol indicates that the peaks passed the Poisson minimum-count criteria, whereas the grey dot indicates the peaks failed. The centre graph is a time series of fire return intervals (smooth fire return interval). The bottom graph is a time series of the smooth peak frequency of fire.

## References:

- Blaauw, M., & Christen, J. A. (2013). Bacon Manual v2. 2.
- Higuera, P. (2009). CharAnalysis 0.9: diagnostic and analytical tools for sediment charcoal analysis. *User's Guide, Montana State University, Bozeman, MT.*
- Stevenson, J., & Haberle, S. G. (2005). Macro Charcoal Analysis: A modified technique used by the Department of Archaeology and Natural History. Canberra: Australian National University.

# Ongoing Studies of Rock-Wallabies in Ipswich

By Tim Shields – Ipswich City Council

Brush-tailed rock wallabies (*Petrogale penicillata*) are one of the most iconic species in South-East Queensland. The City of Ipswich currently protects numerous rocky outcrops, including Flinders Peak and Mount Goolman, in the Flinders-Goolman Conservation Estate. Having being severely impacted by wildfire in late 2012, rock wallabies appear to be recovering.

Ipswich City Council has conducted ongoing monitoring in the Estate and has captured numerous individuals on camera in recent years, including a few joeys in the pouch. The picture below was taken in July on the lower slopes of Flinders Peak, in a spot affectionately known as "The Den Site". This site had been abandoned since the 2012 wildfires and this is the first evidence of the wallabies returning. Investigations are ongoing into previously unsurveyed areas within the Estate.

Moving forward, Council aims to determine whether the populations on individual peaks are genetically isolated from one another, or if they exist as one large metapopulation with the ability to recolonise a site after fire.

Council aims to accurately study the food resources on the lower slopes of known habitat. It is suspected that fire has not directly impacted on individual rock-wallabies; rather the removal of suitable food through inappropriate fire has forced them to live and feed elsewhere temporarily. The purpose of

the study is therefore to determine how rocky wallaby food resources are linked with the local fire regime and how are weeds impacting on the abundance of suitable food post fire.



Photo: Rock Wallaby Mt Flinders. Picture Ipswich City Council

## QFES appoints new executives

By PSBA Media

As part of a recruitment process in 2015, three new QFES executives have been appointed in the recent months. Katarina Carroll APM QFES Commissioner, Mark Roche AFSM Deputy Commissioner (Operations and Emergency Management), and Mr Mike Wassing Deputy Commissioner (Emergency Service Volunteers) and Mr Doug Smith Chief Strategy Officer (Capability and Performance).

Commissioner Katarina Carroll commenced her role in August this year and comes to the Services from the Queensland Police Service in which she was Assistant Commissioner and Program Executive for the Brisbane G20 Summit in 2014.

Deputy Commissioner Mark Roche is responsible for the state operations for fire and rescue, and emergency management. Mark started out in the Fire Service in 1979 in Ipswich and has risen to senior roles including his former role as Assistant Commissioner, Community Safety and Training, and was responsible for Professional Development, State Community Safety Operations, and Training and Emergency Management.

Deputy Commissioner Deputy Commissioner Mike Wassing role includes the overall management of Emergency Service Volunteers within QFES including Rural Fire Service Queensland (RFSQ) and The State Emergency Service.

Mike came to Queensland as Assistant Chief Officer North West for the Country Fire Authority in Victoria. He has more than 25 years' experience in fire and emergency management. Mike has extensive experience leading the management and coordination of responses to major emergencies within an all-

hazards environment. Mike holds a Bachelor of Applied Science in Environmental Management and Land Use Policy, a Diploma in Firefighting Operations and a Graduate Diploma of Business (Strategic Management).

**Editor's note:** The Volunteers in Victoria were so sad they left this message for him "Queensland's gain is our loss, ACO for CFA's North West Region Mike Wassing has been appointed as the Queensland Fire and Emergency Service's new Deputy Commissioner Emergency Service Volunteers. Mike will be sorely missed, and we wish him all the best in his new role." (Volunteer Fire Brigades Victoria, 21 August 2015).

Mr Doug Smith Chief Strategy Officer (Capability and Performance), has extensive experience in developing strategic and reform strategies for organisations and will focus on governance, strategy, performance, transformation and risk, as well as strategic engagement with stakeholders. Doug will be charged with ensuring that QFES continually improves its business through more integrated systems and procedures.

**Editor's notes:** SEQFBC welcomes Commissioner Katarina Carroll, Deputy Commissioner Mark Roche, Deputy Commissioner Deputy Commissioner Mike Wassing and Mr Doug Smith Chief Strategy Officer to their new roles and look forward to working with them in the coming years.

**Late news:** We also congratulate Tom Dawson to the position of Assistant Commissioner to RFSQ and James Haig to Executive Manager Bushfire Mitigation.





## SEQFBC hosts AFAC National Burning Project workshops on the Gold Coast

The National Burning Project (NBP) has been jointly commissioned by the Australian Fire and Emergency Service Authorities Council (AFAC) and the Forest Fire Management Group (FFMG). The project involves the collation and review of agency doctrine relating to how risks to ecological values and operational activities are assessed and monitored during prescribed burning, and development of a national risk management framework. The NBP will produce a set of national guidelines for:

- establishing best practice guidelines for prescribed burning, and
- ensuring greater interoperability between fire management agencies through developing common standards and approaches to prescribed burning.

The NBP comprises of a number of sub-projects that will be completed by 2018. Two sub-projects cover a suite of risks

relating to risk to ecological values and operational activities due to prescribed burning. Other risks covered by the project include fuel hazard (complete) and smoke and greenhouse gases (complete).

In recognition of the importance of the subtropics region in relation to the inherent risks involved with prescribed burning in Australia, AFAC asked the SE Queensland Fire & Biodiversity Consortium (SEQFBC) to coordinate the southern Qld/northern NSW (i.e. subtropics) workshops attended by over 82 people from various government agencies, consultants, and indigenous representatives, and researchers.

The one day workshops were split between Risk Frameworks for Ecological Risk in Prescribed Burning and Risk Frameworks for Operational Risk in Prescribed Burning.

**More information:** [www.afac.com.au/initiative/burning](http://www.afac.com.au/initiative/burning)

## Facilitating a biodiversity legacy for the South Burnett Region

**By Denise Whyte and Greg Griffiths, South Burnett Regional Council.**

South Burnett Regional Council has implemented a biodiversity program over the last 3 years that has seen it plant over 15,000 trees, implementation of a prescribed burn program including 25 prescribed burns, 32 burn plans, roadside burning assessments, Staff training in fire management, and investigation into a methodology into fire and carbon for private land owners.

We assessed 1398 roads within the South Burnett with specific attention to the 529 roads that have endangered

species or fire sensitive vegetation to develop a set of roadside burning approval conditions for fuel reduction which include the use of fire and other methods such as short term periodic grazing permits for areas that are adversely affected by fire or require a specific fire regime.

More information on this project will be available in the New Year.





**Photo:** Collecting vegetation data across all known Northern Eastern Bristlebird locations in the Border Ranges, SEQ. Zoe Stone.

## Eastern bristlebirds, grassy patches and fire

**By Zoe Stone, The University of Queensland**

The Eastern Bristlebird (*Dasyornis brachypterus*) is an endangered passerine endemic to Eastern Australia. The Northern population found along the NSW/QLD border is severely fragmented from the southern populations and occupies significantly different habitat.

Because of its critically endangered status, and ongoing decline, the Northern Eastern Bristlebird (NEBB) information is needed on the habitat dynamics and food availability in regards to changing fire regimes. NEBB occupies grassy Eucalypt forest habitat found on rainforest margins. This habitat has been influenced by changing fire regimes and many of the historical NEBB sites have been lost due to rainforest encroachment.

The overall aim of this research is to determine how changing disturbance dynamics have influenced the quality of habitat, in terms of structural and dietary resources for NEBB. During 2014 I collected vegetation data across all known NEBB locations (extant and extinct), which included information on grass, shrub layer and canopy structure. The idea here is to look at exactly what is occurring within the grass layer, and obtain an accurate idea of what are keystone structural elements for NEBB persistence. This year, I have been collecting invertebrate samples at the same locations, to look at food resource

availability. Both the vegetation and invertebrate data will be analysed in relation to the fire history of each site. We hope to provide an assessment on the state of grassy Eucalypt forest patches across the region, and assist in developing appropriate fire management to promote a healthy grassy layer for NEBB, and the other species that rely on this dynamic ecosystem.



**Photo:** Invertebrate surveys to help determine Eastern Bristlebird (*Dasyornis brachypterus*) food resource availability.

The South East Queensland Fire and Biodiversity Consortium gratefully acknowledges financial support or significant in kind support from the following organisations:



Opinions expressed by contributors to the SEQ Fire and Biodiversity Consortium newsletter are not necessarily those of the SEQ Fire and Biodiversity Consortium nor any of the supporting agencies.