Fire and Biodiversity Forum Margaret River 2021

Broadscale prescribed burning is used extensively as a fire mitigation tool in the SouthWest of WA. In this forum, we will examine its effectiveness and the ways it interacts with the natural landscape, including its impact on all living things. Our objective is to further develop an informed and nuanced conversation around fire mitigation, responses to fire, biodiversity, people and places, in the face of a changing climate.

Carole Peters PhD | Convenor | FaB Forum 2021 | fabforum21@gmail.com

Click links to watch the presentations on Vimeo for free!

DR MIGNON SHARDLOW

Dr Shardlow is a senior lecturer in journalism and the coordinator of Communications and Media at the University of Notre Dame Australia. Dr Shardlow is a journalist turned academic with experience in newsrooms from the Republic of Palau in Micronesia to Kununurra in Western Australia and a few points in between. She has written stories about everything from unexploded bombs to native title claims and knows what it is like to be a fresh journalist looking for work and an editor responsible for hiring journalists.

WADANDI CULTURAL CUSTODIANS MR ISZAAC WEBB AND DR WAYNE WEBB FROM THE UNDALUP ASSOCIATION

Iszaac Webb is a Wadandi-Pibulmun cultural custodian from the Bibblumun nation, an Aboriginal region known also as the Noongar nation. Wooditjup Bilya - Margaret River - being in the heart of Wadandi Boodja has a strong spiritual Cultural significance to the Wadandi people, and as Cultural Custodians they are obligated to protect and manage the Cultural landscape. Iszaac and his father, Elder Wayne Webb, who has recently received an honorary Doctor of Letters from UWA for his lifelong commitment to Aboriginal heritage, are two of the few last speakers of their native language. The family has lived continuously on Wadandi Boodja for generations, enabling both Wayne and Iszaac to bring a wealth of knowledge of their people's culture, especially the

knowledge of Traditional burning. As custodians of their country, they have a continuous cultural, physical and spiritual relationship with the land and sea.

CONVENOR
DR CAROLE PETERS

Carole is an educator, writer, researcher and activist with special interests in feminist and qualitative research, childhood education,gifted and talented education, critical and creative thinking, social justice and the environment. Her PhD thesis (2005) and associated publications investigate leadership, diversity, organisational culture, workplace politics and change. Committee member WAFA and MRREC, supporter FaBWA.

OPENING ADDRESS
PROF STEPHEN VAN LEEUWEN

Professor Stephen van Leeuwen is Australia's first Indigenous Chair of Biodiversity and Environmental Science, based at Curtin University, WA. He is a respected South West Boojarah Wardandi Noongar leader with a profound respect for Country who engages and builds collaborative relationships with Traditional Owners and other land managers to co-deliver novel and enduring outcomes for biodiversity conservation, bio-cultural land management, and the stewardship of Country.

Prof van Leeuwen is also a botanical ecologist, research scientist and senior manager with a diverse research pedigree extending from threatened flora and fauna surveys and management, and fire ecology, through to biological surveys, arid zone ecology, plant taxonomy and pollination biology. He has worked for over 39 years across Western Australia, principally in the rangelands (Pilbara and the Western Desert) and the Kwongan sandplains of the biodiversity hotspot that is southwest Western Australia.

ELDER LYNETTE KNAPP, MS URSULA RODRIGUES AND
DR ALISON LULLFITZ

Lynette Knapp is a Merningar Barduk Noongar Elder and Adjunct Research Associate at UWA Albany. She was raised and still lives in Albany and adjacent regions of the south coast of Western Australia.She escaped institutionalisation, and was taught traditional culture by her father, aunties and other Elders. She is a gifted speaker, cultural heritage advisor, and author of Mirnang Waangkaniny (Batchelor Press 2011).

Ursula Rodrigues has spent her life in awe of the natural places that characterise the corner of this Country she calls home. An affinity with southwest landscapes and an interest in how humans interact with them, led her to study a Bachelor of Science with a second major in Indigenous Knowledge. Combining these, her Honours research concerns southern Noongar fire knowledge, and its application to LGA fire mitigation planning. After 20 years of working in various biodiversity conservation roles, Alison Lullfitz completed a PhD in 2019 in close collaboration with Nyungar/Noongar Elders, exploring how longheld cultural activities have influenced floristic diversity and patterns in south-western Australia. She now teaches and continues cross-cultural research

in conservation biology and ethnobiology at UWA Albany. She currently works on the Walking Together project, aimed at returning Noongar people and knowledge to the centre of land management work in biologically and culturally rich Noongar Boodja.

A NATURAL BLACKFELLA THING, OR HAZARD REDUCTION, OR BOTH?

Bushfire mitigation and planning poses a significant challenge for regional local governments to protect human assets, biodiversity and cultural heritage. Most current approaches to mitigation are recognised as a source of stress for First Nations peoples and may also have negative consequences for biodiversity.

Increased inclusion of First Nations people and their traditional ecological knowledge may facilitate more inclusive land management for fire mitigation to address both cultural concerns and minimise ecological harm caused by inappropriate fire. We present findings of cross-cultural research carried out in the Shire of Denmark, intended to inform management of sensitive vegetation communities for bushfire mitigation using an inclusive and culturally safe approach.

This research has identified key differences and similarities between Noongar and Western land management approaches and aspirations for fire management in southwest Australia.

JOHN CURTIN PROFESSOR KINGSLEY DIXON

Professor Kingsley Dixon is a botanist who works across the fields of restoration ecology, conservation science and ecological impacts, including fire and disturbance regimes. He worked on the discovery of the chemical cues from bush fires responsible for the germination of Australian plants and was the 2016 Scientist of the Year.

MANAGING FIRE IN THE AGE OF EXTINCTION

The southwest Australian biodiversity hotspot represents a region of unparalleled diversity, endemism and species richness. The impacts of our First Nation Peoples on these landscapes and species was one of subtle interaction and respect. In contrast, the European colonisation of the region has brought about changes to the landscapes and native species that are on a scale unknown in evolutionary history.

How we manage the biodiversity of the 30% of the southwest hotspot that remains uncleared represents one of the greatest environmental challenges of the century. Both imposed and natural fire within a rapidly drying and warming environment represent the most pervasive of impacts.

If we are to avert taking many species and ecosystems beyond their ecological tipping point we need to reappraise the evidence for the use of fire while adopting more contemporary approaches to fire mitigation.

DR DAVID GALLOWAY - FERART DESIGN

David works with his clients to create resilient and sustainable projects. He has experience in sustainable design, urban and regional planning, placemaking, consultation, governance, community development, issues management, environmental engineering, carbon projects, climate change adaptation and mitigation, and natural resources management. David brings exceptionally high levels of design thinking and management skills to projects, combining good

business acumen, quality science and community engagement to produce sustainable outcomes. He works at the interface of planning and design, community and environment, business and innovation. David has over 30 years of experience in Australia and internationally, working for government, industry, business, community groups, NGOs and individuals. He has worked in both regional and remote locations, and urban contexts.

FINDING A NEW PLACE FOR FIRE: GOING BEYOND THE TROPES AND CLICHÉS

The challenge that faces us all is how to invent a new burning regime that protects property, supports economic activity and restores the landscape's ecology in the face of drying climate and increasing intensity of wildfires.

Although good innovations are occurring through government, community, NGO and individuals we still have a long way to go. David will open up some of the things that are needed to further this discussion, including an understanding of place, property rights and property management; the role of values and culture; and the specificity of place and localisation of responses.

EMERITUS PROFESSOR DON BRADSHAW

Don Bradshaw is an ecophysiologist whose research has been concerned with how vertebrates living in seasonally or permanently arid environments respond to stressors imposed by these inhospitable places and yet continue to reproduce, and thus survive as populations. An important aspect of his work has been to analyse water deprivation, electrolyte loading, heat stress and the hormonal mechanisms mediating the animals' responses in the field.

The novelty of his approach lies in combining natural history, population ecology and measurements of the circulating levels of hormones mediating responses to environmental challenges. His work on the many endangered marsupials living on Barrow Island and his long-term study of the tiny nectarivorous Honey possum in the extreme southwest of WA has given new insights into the adaptive physiology of the Australian fauna. Since retirement, his focus has been on the conservation of the many rare and endangered species in WA's threatened biodiversity hotspot and the threats posed by frequent fire.

THE IMPACT OF PRESCRIBED BURNING IN SOUTHWEST WA: A HONEY POSSUM'S PERSPECTIVE

Wildfires are expected to increase in both frequency and intensity as a result of global warming. The response that we must 'fight fire with fire' is understandable, perceived as reducing the flammability of the vegetation in fire-prone regions and lessening the impact of wildfires through the removal of 'fuel'. Prescribed burning is, however, focused primarily on protecting human life and infrastructure.

The impact this practice has on biodiversity in bushlands remote from habitation is much less clear. Recent research suggests that the current high frequency of prescribed burning in the southwest biodiversity hotspot is having a negative impact on ecological communities and species of plants and animals, many of conservation concerns. A recent long-term study of the impact of fire on the unique marsupial Honey possum, Tarsipes rostratus, in Scott National Park is used as an example of how too frequent burning can lead to population extinction.

DR LIZ BARBOUR AND MR MIKEY CERNOTTA

Dr Liz Barbour is the CEO of the Cooperative Research Centre for Honey Bee Products. Coming from a strong research management background in industry, State Government and the university system, in Australia she has worked for the University of Western Australia (UWA), Murdoch University and the State Government in two agencies and awarded funding from the Australian Research Council, Natural Heritage Trust, AgriFutures Australia and Australian Centre for International Agricultural Research. Through a forestry interest, the genetic improvement and deployment of commercially important plants has been her research focus.

Mikey Cernotta is the owner of The Pemberton Honey Company, a migratory commercial beekeeping business that produces and packs monofloral honey from all over the South West. Having established himself as a strong advocate for resource security within industry, Mikey has taken an active role in campaigning against the loss of flowering resources in forests, woodlands and coastal areas due to logging and prescribed burning. His views on the importance of the WA beekeeping industry go much further than just the honey produced, a major focus of his is educating the broader public and agricultural industries on the intrinsic link between forests, bees and food security.

MEASUREMENT OF FIRE IMPACTS THROUGH HONEY BEE PRODUCTIVITY

Honey bee industry success in Australia is reliant on reproductively mature native forests and scrubland. Regular migratory movement of the hives can keep the honey bees on a flowering resource year-round sustaining their health and honey production. Fire (wild or prescribed) impacts these resources and the extent can be monitored through beekeeper movement and honey yields. This presentation will outline how the impact of fire on a beekeeper business, and in turn what that means for food security, is being measured, and the consequences the outcomes are signalling for the conservation of our endemic flora.

COLLEGIAL ADDRESS: EVIDENCE AND PRACTICE
WINTHROP PROFESSOR CARMEN LAWRENCE

After training as a research psychologist at the University of Western Australia and lecturing in a number of Australian universities, Dr Lawrence entered politics in 1986, serving at both State and Federal levels for 21 years. She was at various times WA Minister for Education and Aboriginal affairs and was the first woman Premier and Treasurer of a State government.

She shifted to Federal politics in 1994 when she was elected as the Member for Fremantle and was appointed Minister for Health and Human Services and Minister assisting the Prime Minister on the Status of Women. She has held various portfolios in Opposition, including Indigenous Affairs, Environment, Industry and Innovation and was elected national President of the Labor Party in 2004.

She retired from politics in 2007 and was Director of the Centre for the Study of Social Change in the School of Psychological Science at the University of Western Australia where she is now an Honorary Research Fellow and Professor Emerita. She is currently Chair of the Conservation Council of W.A

MR ED HATHERLEY - DBCA

Ed Hatherley is a fire practitioner who has extensive experience in northern and southern Western Australia. Ed is currently the District Fire Coordinator for DBCA's Blackwood District based in Margaret River. Ed began his career in fire management in Kirup. Following a period of travel overseas and returning to work in fire management roles in the Kimberley region for over ten years, Ed returned to the southwest to manage the complexities of implementing prescribed burning in an area of significant biodiversity and industry values.

FIRE MANAGEMENT ON THE LEEUWIN NATURALISTE RIDGE – A FIRE

PRACTITIONER'S PERSPECTIVE

The Leeuwin Naturaliste ridge is unique, unspoilt, rich in endemic biodiversity, a global destination for tourism and the wine industry and it presents many challenges from a fire management perspective. DBCA has been very active with prescribed burning in and around Margaret River to protect the community and biodiversity. This presentation looks at these challenges and the outcomes of these recent prescribed burns close to Margaret River from an operational perspective.

DR VALERIE DENSMORE - DBCA

Valerie Densmore is a fire scientist researching how fire behaviour impacts the environment to inform methods to improve ecological outcomes. She has several years of front-line experience managing dynamic fire environments, observing how environmental conditions, operational constraints and limited resources shape time-critical decisions both with the NSW Rural Fire Service and currently at the Dept of Biodiversity, Conservation & Attractions, WA. Valerie holds a PhD in fire ecology from the University of Sydney.

COMPARING HOW PRESCRIBED BURNING VS BUSHFIRE IMPACTS KEY HABITAT VALUES IN SW WA

Fire ecology research has often examined how fire interval or time since fire affects key species or ecological communities, but research less frequently compares the ecological impacts of low intensity and high-intensity fire. In this presentation, we will discuss recent studies examining the availability of food resources for fauna following prescribed burning or bushfires, and how fire severity relates to the retention of shelter in SW forests and woodlands. This work highlights the need to distinguish between low and high-intensity fire when considering how fire impacts species and ecological communities.

MR DAVID KNOWLES

David Knowles is the Spineless Wonders Biodiversity Inventory Surveys consultant based in Perth Western Australia. He has always lived and breathed for the environment and its inhabitants. David has had 44 years of bio-survey experience in Australia, Vietnam, Brunei, Singapore, Malaysia, Indonesia and New Guinea. Alongside surveys, he studies, photographs, writes and encourages the appreciation of invertebrates and reptiles to a wide audience, through school and other presentations and displays. His photographic library contains the largest private collection of WA macroinvertebrate images.

CUMULATIVE SPRINGTIME BURNING PRACTICES AND THE POTENTIAL FOR

ECOCIDAL OUTCOMES

David explores the history of threatening burning processes by first and second wave Homo sapiens, with a focus on macroinvertebrate leaf decomposers. He asks the question: Does non-discriminatory incendiary firebombing of various biodiversity habitats (refugia) by second wave burners during peak spring flower and pollinator activity amount to targeted ecocide?

Note: Ecocide is a human activity that violates the principles of environmental justice, as by substantially damaging or destroying ecosystems or by harming the health and well-being of a species.

DR ANNA HOPKINS

Dr Anna Hopkins is a Senior Lecturer in microbial ecology at the Centre for Ecosystem Management and co-lead of the Molecular Ecology and Evolution Group at Edith Cowan University in Perth. Her research focus is fungal ecology, with extensive experience working with soil microbes, wood decay fungi and invasive forest pathogens in eucalypt and other broadleaved forests and pine plantations in Australia, New Zealand and Scandinavia.

Recent projects include understanding the impact of disturbances such as drought, fire and urbanisation on soil microbes, fungal-plant-fauna interactions and using eDNA techniques to answer broad ecological and management-based questions.

SOIL FUNGAL RESPONSES TO DISTURBANCE IN SOUTH-WESTERN AUSTRALIA.

This talk will outline recent research examining the impact of disturbances such as drought, heatwaves, fire and loss of digging mammals on soil fungi and ecosystem function.

ADJUNCT ASSOC PROF PHILIP ZYLSTRA

Phil Zylstra is a fire behaviour scientist and ecologist, working in an adjunct role as an Associate Professor with Curtin University.

Coming from a background in the grazing industry, Phil worked in fire management and as a specialist remote area firefighter before eventually moving into research. Shaped by the belief that fire behaviour modelling should provide measurable improvements to both firefighting and management, Phil has produced the first and only peer-reviewed fire behaviour model for the majority of Australian forests, along with conducting the largest and most intensive analyses of historical fire in the country.

COOPERATING WITH COUNTRY

The concept of prescribed burning is premised on the idea that fire risk is related to the weight of fine biomass in a forest, predominantly leaf mulch. Because this accumulates after fire until balanced by decay, older forests are considered highly flammable. As a result, forests are treated as dangerous to both humans and to themselves unless kept in a state of disturbance; unless humans take charge and manage them.

I will contrast this belief system with the body of science showing that forests in fact create stable environments if allowed to mature, that it is in fact disturbance that creates the increased level of risk. By considering this in the context of approaches that enabled Australia's First Nations to

survive as the most ancient living cultures on earth, I will attempt to articulate a new paradigm in which we are co-residents cooperating with country, rather than managers subduing it.

Fire Management of the Leeuwin-Naturaliste Ridge
SiVIDEO Digital Video Production
'Controlled Burn' BS520
The start of the Margaret River Bushfire Nov 2011

Tony Pedro
Farmer, Firefighter and Conservationist
Video: Don't Torch the Tingles!

Tony Pedro
Farmer, Firefighter and Conservationist
Video: Frontline Firefighter

Hendrik Vissor - Onetrak
Tigercat Forestry Equipment

ABC Landline: Sunday 21/2/21
iview.abc.net.au

Striking the balance between hazard reduction burns and biodiversity