The University of Adelaide bushfire expertise list

TITLE	SURNAME	FIRST NAME	FACULTY	AREA OF EXPERTISE	CONTACT DETAILS
Prof	Babie	Paul	Professions	Property law research explicitly exploring the challenge posed by climate change and environmental harm generally, to the future of property law. How can governments legislate to regulate the way we relate to e.g. land, cars, houses, IP, etc, in ways that ensure better outcomes both for people and for the environment / water allocation law and use.	paul.babie@adelaide.edu.au
A/Prof	Bardsley	Douglas	Arts	The analysis of risks to socio-ecological systems and the development of effective responses to them in the fields of bushfire management, agricultural development, invasive species management, coastal planning, human migration, biodiversity conservation and climate change adaptation.	douglas.bardsley@adelaide.edu.au
Prof	Bi	Peng	Health and Medical Sciences	Environmental health, climate change, infectious diseases, emergency public health event response and population health.	peng.bi@adelaide.edu.au
Dr	Boardman	Wayne	Sciences	See also Anne-Lise Chaber. Conservation of endangered species, emerging wildlife diseases, wildlife disease ecology, health and diseases of Australian native wildlife, wildlife anaesthesia. Crisis management with the organisation of emergency wildlife care. Post-fire – wildlife recovery: both of us have experience and lead several wildlife re-introduction or animal supplementation programs.	wayne.boardman@adelaide.edu.au
Dr	Bond	Anthelia	Professions	Applied ecology and economics. Ecological and social data collection and analysis (including spatial analysis). Project management.	anthelia.bond@adelaide.edu.au

Prof	Brookes	Justin	Sciences	Water Research Centre (see also Westra, Gillanders, Santos). Modifications to landuse change the way the water flows and how this transports particles, chemicals and contaminants across the landscape. Wildfires change the landscape and chemistry and soils become highly erodible. This presents an immediate threat to aquatic habitats as particles and chemicals are transported into streams, rivers and estuaries. Particles can reduce light availability and so change primary production in the system, which is the basis for energy flow and food webs. An additional challenge with fires is a modification of hydrology as vegetation rebounds and water capture and evapotranspiration increases. This changes water yield in water supply catchments and groundwater recharge rates.	justin.brookes@adelaide.edu.au
Dr	Burdon	Peter	Professions	Climate Change Law with a particular emphasis on Australia's obligations under the Paris Agreement, national determined contributions and climate finance.	peter.d.burdon@adelaide.edu.au
A/Prof	Cassey	Phillip	Sciences	Many of Australia’s unique habitats and endemic flora and fauna are highly threatened by invasive alien species - particularly mammalian predators and large herbivores. Many of these species (e.g., feral horses, goats, deer, and predatory cats and foxes) will respond quicker following extreme habitat changes (such as fire) than native species, and will exacerbate the population extinction risk for these species. Fire events will often lead to a concentration of populations (distribution and abundance) and can facilitate unique opportunities for innovative control strategies, post fire.	phill.cassey@adelaide.edu.au
Prof	Cavagnaro	Timothy	Sciences	The soil ecology research group at the University of Adelaide focuses on the question: How do we manage soil ecological processes to achieve agricultural and environmental sustainability in a time of significant environmental change? When plant material is not completely burnt; or is exposed to differing degrees of charring before it falls to the soil surface where it is decomposed by the soil microbiome; it can cause a dramatic shift in the composition of the soil microbial community and reduced mineral nitrogen availability in the soil. This will have important flow on effects for vegetation and soil recovery after a fire.	timothy.cavagnaro@adelaide.edu.au

Dr	Chaber	Anne-Lise	Sciences	Conservation of endangered species, emerging wildlife diseases, wildlife disease ecology, health and diseases of Australian native wildlife, wildlife anaesthesia. Crisis management with the organisation of emergency wildlife care. Post-fire – wildlife recovery: led several wildlife re-introduction or animal supplementation programs.	anne-lise.chaber@adelaide.edu.au
Prof	Chittleborough	David	Sciences	Movement of particulate and dissolved organic carbon, clays from soils In catchments and their impact on water quality in streams and storages. Element and mineral analysis of soils. Chemical and mineralogical techniques to track the source and dispersion of clays and organo-mineral components from their source in catchments and transport into waterways.	david.chittleborough@adelaide.edu.au
Prof	Chur-Hansen	Anna	Health and Medical Sciences	Knowledge and research abilities in relation to the psychological impact of loss of companion animals, livestock and wildlife on individuals and groups.	anna.churhansen@adelaide.edu.au
Prof	Conduit	Jodie	Professions	Customer engagement, corporate volunteering, volunteer engagement, service systems, market shaping.	jodie.conduit@adelaide.edu.au
Prof	Connell	Sean	Sciences	Local marine conservation and local marine technology. Aquaculture industry (abalone & oysters). Diversifying income with eco-tourism.	sean.connell@adelaide.edu.au
Adj	Daniels	Chris	Sciences	Wildlife recovery.	Chris.Daniels@sa.gov.au
Dr	Delean	Steve	Sciences	Biodiversity monitoring, and the management of over-abundant native and pest species. Statistical models to guide the management of native and feral species.	steven.delean@adelaide.edu.au
Prof	Donnellan	Steve	SA Museum/Sciences	Systematics and population genetics of Kangaroo Island and Mount Lofty Ranges vertebrates. Are island populations conspecific with the mainland or island endemic? Impact on conservation status, translocations and rescue options.	Steve.Donnellan@samuseum.sa.gov.au
Dr	Farkas	Juraj	Sciences	The Metal Isotope Group offer expertise and tools to trace the sources and pathways of heavy metals released into the environment due to bushfires. They can apply existing methods and develop new metal isotope tracers to better understand the mobilisation and fluxes of these toxic metals released from 'burned vegetation & infrastructure' into the local soils and eventually hydrological reservoirs - soil waters, streams, groundwaters - contaminated by such fire-mobilised metals.	juraj.farkas@adelaide.edu.au

Prof	Fitzpatrick	Robert	Sciences	Soil Forensics. The irreversible alterations to soil minerals and soil structure from intense fires. Fire may cause severe mineral alterations to soils, which includes the permanent conversion of some minerals into new minerals under a range of temperature conditions. Trace element availability and soil structure is affected. X-ray diffraction analysis (and experiments) on bone fragments - can be applied to bones and bone fragments being recovered from wild animals in fires.	robert.fitzpatrick@adelaide.edu.au
Dr	Gaskin	Sharyn	Health and Medical Sciences	Adelaide Exposure Science & Health (AESH) specialises in understanding the population exposures (environmental and occupational) during and after fire and what to do and avoid to ensure the by-products of combustion do not contribute to adverse acute and chronic health outcomes. Technical Advice Co-ordinators for the State Emergency response network.	sharyn.gaskin@adelaide.edu.au
Prof	Gillanders	Bronwyn	Sciences	Effects of bush fire on the estuarine systems including water quality and fish assemblages.	bronwyn.gillanders@adelaide.edu.au
Prof	Grutzner	Frank	Sciences	Genetic testing of scat, swap, hair and soil samples. Citizen Science and public engagement.	frank.grutzner@adelaide.edu.au
Prof	Hill	Bob	Environment Institute	The evolutionary response of plant species to regenerate after fire. As fire frequency rises with climate change and they become more intense, especially when associated with long-term drought events, then the evolutionary mechanisms can begin to fail. It is critical that we monitor this, since failure of these adaptations is a major issue prohibiting successful native vegetation regeneration post-fire.	bob.hill@adelaide.edu.au
Prof	Hodge	Sandra	Health and Medical Sciences	Respiratory diseases. Understanding key respiratory and inflammatory responses and designing specific clinical approaches that improve recovery time, and monitor/minimise long-term health adversity from bushfires.	sandra.hodge@adelaide.edu.au
Dr	Hogendoorn	Katja	Sciences	Insect recovery and monitoring. How certain key invertebrate taxa (for functional groups) recover over time (ants, native bees, water invertebrates etc).	katja.hogendoorn@adelaide.edu.au
Mr	Johns	Craig	Professions	Analysis of agribusiness and agroforestry value chains and value chain improvement activities across the industry. Global food experience from production through to consumption from the perspective of both the private and public sectors.	craig.johns@adelaide.edu.au

Prof	Lewis	Megan	Sciences	The Spatial Sciences Group (SSG) offer considerable expertise in environmental surveillance, remote sensing and geospatial analysis, to enhance management and monitoring of fire affected environments at scales ranging from extremely high-resolution to broad landscapes. They are able to advise and provide training for field personnel in the use of novel technologies and data streams. • Rapid mapping of burnt areas • Monitoring impacts and regeneration after fires • Characterisation of past fire frequencies, extents and regimes (using decades of archived imagery) to inform fire prediction, control burning and habitat management for wildlife • Analysis of climatic, environmental and cultural influences on fire regimes • Spatial prediction of heatwaves and extreme weather • Dynamic regional land cover and fuel load assessment to inform fire prediction models • Geographic analysis of land uses, infrastructure and environmental constraints to underpin safety and emergency planning.	megan.lewis@adelaide.edu.au
Dr	Lim	Michelle	Professions	Futures-focused biodiversity law and governance.	michelle.lim@adelaide.edu.au
Prof	Maier	Holger	ECMS	The integrated assessment of regional bushfire risk and the effectiveness of different mitigation strategies over a range of time periods due to changes in future conditions such as climate change, population growth, economic development, land-use planning, fuel load reduction. The group have co-developed UNHaRMED – the Unified Natural Hazard Risk Mitigation Exploratory Decision support system for testing the effectiveness of different bushfire risk reduction strategies supporting Government agencies reduce future risk.	holger.maier@adelaide.edu.au
Dr	McInerney	Cesca	Sciences	Examines how climate change influenced terrestrial ecosystems in the geologic past.	cesca.mcinerney@adelaide.edu.au
A/Prof	Mosley	Luke	Sciences	Intense bushfires can have major deleterious effects on soil including loss of organic carbon and nutrients, increased erosion, and water repellency. Effects may last for decades or more post-fire. Wind and water erosion post-fires also can create major impacts on water supplies and ecosystems.	luke.mosley@adelaide.edu.au

A/Prof	Nursey-Bray	Melissa	Arts	Development of short courses/workshops on adapting to bushfires - to deliver to stakeholders/local govts re risk/climate management or for bushfire management/situations. Community engagement/building adaptive capacity. Building effective disaster and recovery communications to manage future risk. Indigenous engagement re managing after fire events on country/places of residence.	melissa.nursey-bray@adelaide.edu.au
A/Prof	O'Connor	Patrick	Professions	Ecological assessment design and implementation. Incentive design and implementation. Recovery evaluation and reporting.	patrick.oconnor@adelaide.edu.au
Dr	Packer	Jasmin	Sciences	Co-designing alternatives to prescribed burns for landscape-scale and fine-scale management (threatened flora) with industry; Co-designing with industry and community on translocations to minimise future risk to threatened species from bushfire. Responses after fire for wildlife and their habitat quality.	j.packer@adelaide.edu.au
Prof	Pisaniello	Dino	Health and Medical Sciences	Adelaide Exposure Science & Health (AESH) specialises in understanding the population exposures (environmental and occupational) during and after fire and what to do and avoid to ensure the by-products of combustion do not contribute to adverse acute and chronic health outcomes. Technical Advice Co-ordinators for the State Emergency response network.	dino.pisaniello@adelaide.edu.au
Dr	Prowse	Thomas	ECMS	The impact of prescribed burning on avian diversity and abundance in the Mount Lofty Ranges and is familiar with the broader literature on optimising anthropogenic burning for conservation and biodiversity.	thomas.prowse@adelaide.edu.au
Dr	Raja Segaran	Ramesh	Sciences	The Unmanned Research Aircraft Facility (URAF) offers environmental surveillance, remote sensing and geospatial analysis, to enhance management and monitoring of fire affected environments. Training for field personnel in the use of novel technologies and data streams. Detecting post fire hotspots and wildlife data collection/retrieval. Fuel load assessment to inform fire prediction models. Longer-term impacts of controlled burning and habitat management.	ramesh.rajasegaran@adelaide.edu.au

Dr	Santos	Abel	ECMS	Water Research Centre (see also Westra, Gillanders, Santos). Modifications to landuse change the way the water flows and how this transports particles, chemicals and contaminants across the landscape. Wildfires change the landscape and chemistry and soils become highly erodible. This presents an immediate threat to aquatic habitats as particles and chemicals are transported into streams, rivers and estuaries. Particles can reduce light availability and so change primary production in the system, which is the basis for energy flow and food webs. An additional challenge with fires is a modification of hydrology as vegetation rebounds and water capture and evapotranspiration increases. This changes water yield in water supply catchments and groundwater recharge rates.	abel.santos@adelaide.edu.au
A/Prof	Semmler	Carolyn	Health and Medical Sciences	Immediate psychological responses to crisis and long term science communication and behaviour change to mitigate risk and prepare for climate change.	carolyn.semmler@adelaide.edu.au
Prof	Soebarto	Veronica	ECMS	Eco-friendly and resilient approaches to planning, building design and construction.	veronica.soebarto@adelaide.edu.au
Dr	Speight	Natasha	Sciences	Research on the diseases of koalas - supporting their conservation and management.	natasha.speight@adelaide.edu.au
A/Prof	Tan	Yan	Arts	Migration and displacement. Translation into workable policy to reduce vulnerability and promote sustainable urbanisation and rural development.	yan.tan@adelaide.edu.au
Dr	Thomson	Vicki	Sciences	Feral cats are one of the main drivers of native animal declines and extinctions in Australia. Feral cats are often able to move into burnt areas after fires and outcompete, or predate on, vulnerable populations of local native animals that are now without protective cover. How native species survive this post-fire devastation is important for their future prognosis.	vicki.thomson@adelaide.edu.au
Dr	Thornhill	Andrew	Sciences	Molecular phylogenetic analyses. The genetic spatial distribution of Australia's flora to improve conservation planning. Vegetation survey, plant identification, and herbarium collection skills.	andrew.thornhill@adelaide.edu.au

A/Prof	Tibby	John	Arts	Can combine fire records (from charcoal and potentially other indicators - such as sediment FTIR) to infer fire history and then use a suite of other approaches (sediment geochemistry, pollen and diatom analysis) to examine the soil response to fires and the knock on effects to vegetation and aquatic ecosystems. The resilience of soils and ecosystems to fire. To what extent do they resist perturbations vs entering a new state?	john.tibby@adelaide.edu.au
Dr	Turczynowicz	Leonid	Health and Medical Sciences	• Adelaide Exposure Science & Health (AESH) specialises in understanding the population exposures (environmental and occupational) during and after fire and what to do and avoid to ensure the by-products of combustion do not contribute to adverse acute and chronic health outcomes. • Provision of occupational health advice on mitigation of hazards for workers in affected areas including correct PPE. • Technical Advice Co-ordinators for the State Emergency response network. • Human health risk assessment of chemicals produced or released following bushfires to air, soil, water and for buildings. • Vapour intrusion exposure assessment associated with leaks and losses of fuels and other volatile unburnt hydrocarbons into soils and groundwaters. • Risk communication for affected communities including workers.	leonid.turczynowicz@adelaide.edu.au
Prof	Turnbull	Deborah	Psychology	Mental health.	deborah.turnbull@adelaide.edu.au
Dr	Tyler	Jonathan	Sciences	Reconstructing climate and fire histories from lake and wetland sediments. Assessing the long-term link between climate variability, vegetation change and fire occurrence. Using stable isotopes to trace the movement of water and materials through the environment.	jonathan.tyler@adelaide.edu.au
Prof	Umberger	Wendy	Professions	Behavioural economics, agribusiness, agricultural, food and nutrition/health sciences. Understanding the links between food system transformation and consumer and producer welfare.	wendy.umberger@adelaide.edu.au

Prof	Waycott	Michelle	Sciences/DEW	How plants adapt to stressful environments and respond to specific stressors such as fire, sea-level rise, nutrient excess/depletion and physical disturbance. Plant attributes at a species level – sometimes referred to as 'vital attributes' – that relate to a species ability to recover from fire. Population structure studies to determine provenances and the ability of species to maintain modern connectivity, increasingly important in our current climate. Resilience of plant habitats under changing conditions. Seed collections for restoration and translocation activities.	michelle.waycott@adelaide.edu.au